# JOURNAL of GEOGRAPHY

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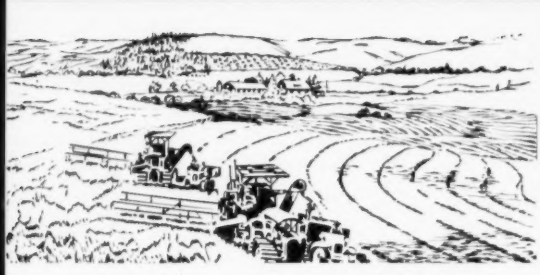
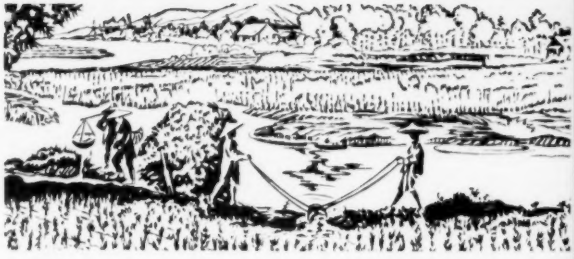
GEOGRAPHY

Volume LVII
September, 1958
Number 6





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Contents of the JOURNAL are indexed regularly in the *Educational Index to Periodicals*.


Authors alone are responsible for opinions and statements in the JOURNAL.



PRINTED IN THE U.S.A.

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The subscription price is $4.00 a year payable in advance. The price of single copies is 50 cents. Postage prepaid on subscriptions from the United States and dependencies Canada, and Mexico. All other countries in the Postal Union add for postage 45¢ on annual subscriptions (total $4.45), on single copies 5¢ (total 55¢). All subscriptions are payable in United States Dollars.

**The JOURNAL is the official organ of the National Council for Geographic Education and is sent to all members. The annual dues, $4.00, are payable to the JOURNAL OF GEOGRAPHY.** Extra postage rates for copies sent to foreign countries should be added to the membership dues. Make all remittances payable to the JOURNAL OF GEOGRAPHY, in postal or express money orders or bank drafts.

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*Published monthly except June, July and August*

PUBLICATION OFFICES: 450-454 AHNAIP STREET, MENASHA, WISCONSIN

Business Correspondence, Membership Dues, and Subscriptions may be sent to Publication office or to

A. J. NYSTROM AND COMPANY
PUBLISHERS, JOURNAL OF GEOGRAPHY
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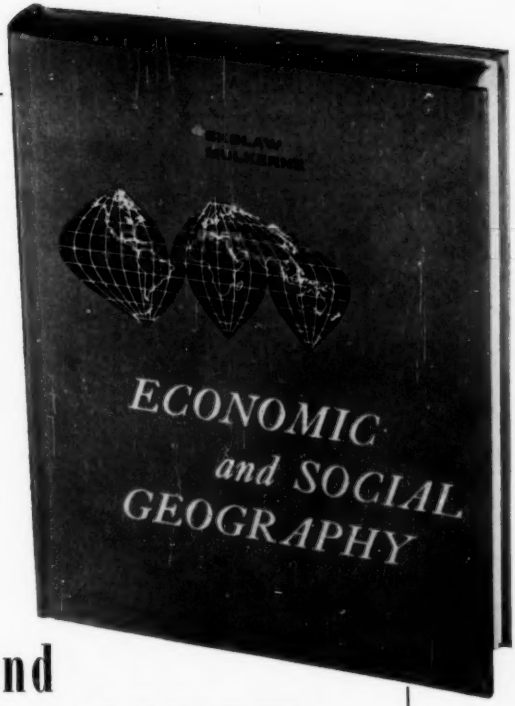


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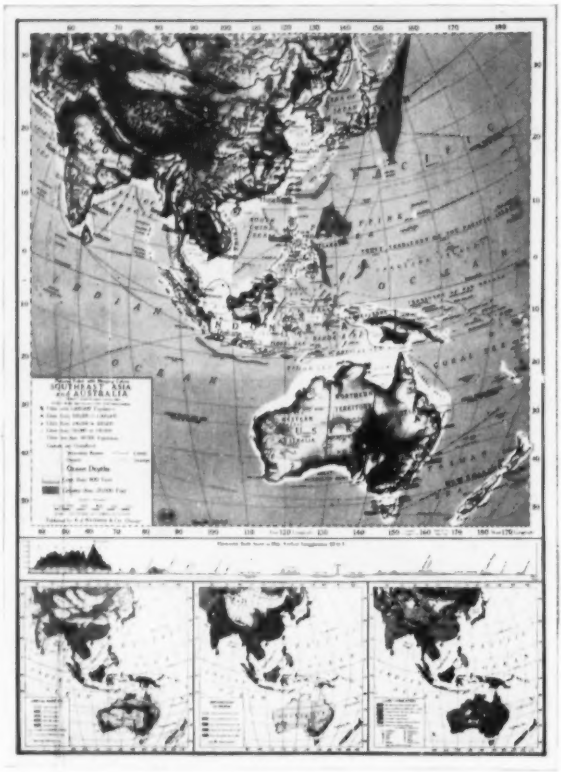


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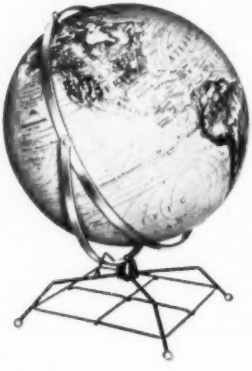

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VOLUME LVII SEPTEMBER 1958 NUMBER 6

# ANTARCTICA

ROBERT B. MONIER
HERBERT J. VENT
Air University

Unlike the Arctic, which is primarily an ocean basin surrounded by lands, Antarctica is a land mass surrounded by oceans. Including a cover of ice its average altitude is nearly 6,000 feet, which is higher than any other continent. Except for a few isolated coastal outposts, the land is uninhabitated. It is an almost lifeless, cold, bleak, uninviting desert approximately one-half the size of the African continent.

Antarctica is not presently a sensitive spot in international relations. However, interest in this continent has been highlighted by the International Geophysical Year (IGY) of 1957-58 in which ten nations established 46 outposts for the purpose of scientific investigation.

One of the reasons this vast ice covered land is so interesting lies in the fact that it is the last large unexplored area in the world. Nevertheless, a large fund of information has already been collected concerning Antarctica, as well as the adjacent waters about it. Some of this information, such as knowledge of the ocean passages around Cape Horn and the Cape of Good Hope, and the studies of marine life in connection with whaling and sealing activities in the southern seas has long been put to useful purpose. There is also, by this time, an imposing collection of climatological data potentially useful for world weather forecasting. This fund of information is constantly being enlarged.

Concern with the potentialities of Antarctica inevitably involves the possibilities for locating valuable mineral resources, as well as the possibility of using the continent for future military operations such as missile launching sites, and for nuclear weapons testing. The ice wastes might some day be highly desirable as space vehicle launching sites. Also, new uses of atomic power and other

technological developments may permit this frozen continent to support a population, but these possibilities are concerns of an unforeseeable future.

In the field of "pure" research, Antarctica provides a natural laboratory where certain kinds of studies can best be carried out. Such major areas of interest being scientifically investigated during the IGY activities include cosmic rays, glaciology, gravity measurement, ionospheric physics, seismology, meteorology, geomagnetism, aurora airglow phenomena, oceanography, rocketry, geodesy, and solar activity. These suggest a few of the facts concerning man's relations with the universe which can be learned or enlarged upon from the scientific activities which continue to be carried on in Antarctica.

## Explorations of Antarctica

Those aspects which now entice various powers to Antarctica are not those which first fired men to search as far south as they could sail. Antarctic exploration passed thru several stages. The earliest was a manifestation of a pressing urge which affects many men to be the first to set foot on unknown lands. This combined with the seventeenth and eighteenth century empire building era accounts for such early explorations as those of Captain Cook, who first circumnavigated the Antarctic continent (1772-1774). He, and men of many nations desired to conduct scientific explorations of uncharted areas and discover new riches and lands, and so gain for their kings and countries, as well as for themselves, new affluence and prestige.

Not until the commercial value of seals and whales which are found on and off these far southern coasts and nearby islands attracted other bold seafaring men, at the beginning of the nineteenth century, did land masses so far south become important to nations. Captain Nathaniel Palmer, a Yankee sealer, is typical of those who combined specific commercial venture with desire for adventure. Such men as these were responsible for making known the outlines of the great land mass of Antarctica.

During the latter part of the nineteenth century, France, Great Britain, Russia, New Zealand, the United States, and Norway all sent expeditions to the Antarctic region. However, it was not until 1895 that man first set foot on the Antarctic continent, in which year Captain Christensen, commanding a Norwegian whaler,

landed with a small party near Cape Adare. England was the first country to organize a party for exploration purposes (1898). The men of this expedition landed at what had already been named Cape Adare by earlier explorers who had seen it from sea across the intervening ice. They planned to move inland during the summer season, but rugged surface features, ice, snow, and cold kept them pinned to the coastal beach on which they landed. While they collected valuable weather and meteorological data, they also gained knowledge of the formidable problems of inland explorations.

The romantic era of inland Antarctic exploration began with the twientieth century. In 1901 Robert Falcon Scott led the British National Antarctic Expedition which cruised along the Ross Barrier and eastward until land was seen. This land was named King Edward VII Land. During the winter season of 1902, several short journeys inland provided preliminary training and experience for longer and more dangerous travels. In November 1903, Scott, Ernest Shackleton, and Dr. E. A. Wilson began an inland journey which took them to 82° 17′ South, or approximately 532 miles from the South Pole.

While there were other expeditions in 1902, 1903 and 1904 from France, Norway, and Scotland, the next major attempt to investigate Antarctica was led in 1908 by Ernest Shackleton. The objectives of this expedition were to: 1. reach the South Pole, 2. locate the South Magnetic Pole, and 3. to explore King Edward VII Land. A base was established on Ross Island and preparations were made for a journey to the South Pole during the coming year. This party penetrated to within 97 miles of the South Pole before being forced back due to shortage of food. They had traveled a total of 1,600 miles across the face of Antarctica. Several geographical features were discovered on this journey: 1. Beardmore Glacier, the largest valley glacier in the world; 2. the Polar Plateau; and 3. the Polar Mountain Ranges. These important findings and Shackleton's preliminary surveys assisted future explorers in locating permanent land marks and direct routes to the South Pole. Also, it provided invaluable knowledge of Antarctic ground travel conditions. At the same time that Shackleton's party was attempting to reach the geographical South Pole, another group from his expedition was the first to reach the South Magnetic Pole.

Captain Roald Amundsen was the first man to reach the South Pole, setting foot there on December 15, 1911. This expedition con-

sumed 99 days. Its sole purpose was reaching the South Pole, and for that reason little scientific investigations were made by the Amundsen party.

Concurrently, an ill-fated British push to the South Pole was underway commanded by Robert Falcon Scott. It reached the South Pole on January 18, 1912, just 33 days after Amundsen had arrived. While the tragedy (all five members of the party perished on the return journey) and failure of the expedition loomed large in the eyes of the supporters, much valuable scientific data were gathered by those members of the expedition who remained at the base camp. Temperatures of −77°F, the lowest recorded up to that time were experienced; ice content studies were carried out; drift of the ice pack was measured; and detailed geological and geomorphological studies were made. These and many other observations made this expedition one of the most valuable scientific polar expeditions in Antarctica.

Additional expeditions under Sir Douglas Mawson and Dr. Wilhelm Filchner (Australia), carried on in 1911 and 1912, added considerable scientific knowledge to the growing store of data. King Edward VII Land was explored and mapped. Queen Maud's Land, Adelie Coast, and King George V Land were discovered and/or surveyed. During the 1920's additional surveys were continued both on land and by sea, leading to important discoveries of other Antarctic lands and waters.

The United States began extensive exploration and surveying of Antarctica in 1929 with Rear Admiral Richard E. Byrd's first expedition. Airplanes were used extensively for the first time by this expedition. On November 28, 1929, Byrd flew over the South Pole and became the first man to fly over both the North and South Poles.

Since 1930 most of the exploration and investigation of Antarctica have been undertaken by England and the United States, but other countries have also carried out surveys and established Antarctic outposts, with emphasis on research activities in contrast to pure exploration. The major expeditions of the United States and Britain have been primarily concerned with more complete investigation of known lands, physical features, charting of the ocean areas surrounding the continent, measurement of potential resources and aerial surveys of the interior. Australia, France, Norway, New Zealand, and Argentina have maintained and pro-

vided scientific sites for specific kinds of information, such as weather stations, charting of whaling waters, measurement of tides and ice studies. The many visits to Antarctica have greatly enlarged knowledge concerning the continent. This understanding of the geographical conditions is necessary for an evaluation of the importance of this region.

## PHYSICAL GEOGRAPHY

**Geographic Definition and Location.** There are a number of definitions for delineating the Antarctic. Among the most valid are the Antarctic Circle, iceberg limits, limits of pack ice, mean annual isotherm of 32° Fahrenheit, and the Antarctic convergence. As defined in this discussion, Antarctica includes all of the land continent and the permanent ice shelf accompanying the continent. Antarctica is the only polar continent and is contained almost entirely within the Antarctic Circle. The only exceptions are the northward extension of the Palmer Peninsula and a few small protruding portions of Wilkes Land and Enderby Land. Recent IGY seismic soundings point to the possibility that Antarctica may not be a single land mass, but rather, two large land masses—East and West Antarctica —separated along the Ross-Weddell Graben. Seismic soundings indicated that along the Ross-Weddell Graben the land surface is below sea level. However, it may be that these soundings indicate only areas of the continental surface which have sunk due to the weight of the ice.

**Surface Features.** Altho the most outstanding topographic feature of Antarctica is its elevation average, over 6,000 feet, the continent is also characterized by a number of prominent mountain ranges. Along the eastern and southern boundaries of the Ross Sea are the highest continuous mountains (Queen Maud Range) rising to heights of over 14,000 feet (Fig. 1). Farther east, the Andean mountain system of South America reappears in the Palmer Peninsula and continues into Marie Byrd Land where Mt. Vinson is known to reach a height above 19,000 feet. In the coastal areas of Queen Maud Land are other prominent ranges which pose serious barriers to entry into the continental interior.

The significant geomorphic features are associated with the continental ice cap which molds into a single whole, the land masses of Antarctica. These include the South Polar Plateau, where the depth of ice reaches 13,000 feet, and which extends into areas still not

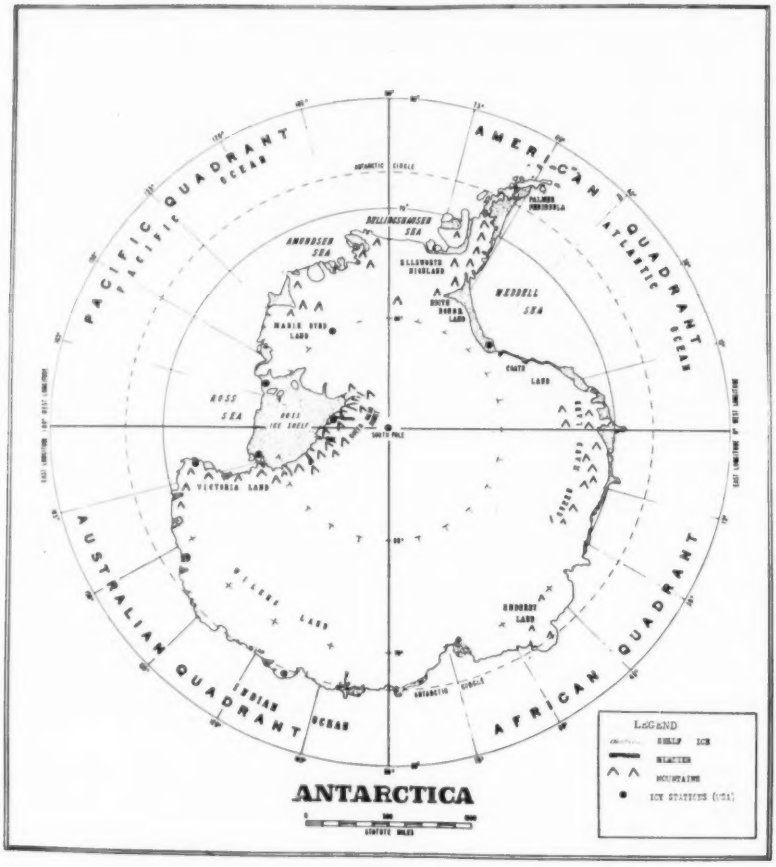


Fig. 1

surveyed; the shelf ice formations which are unique features of Antarctica and which constitute the largest floating ice masses in the world; and the coastal cliffs, some of which are ice covered and some of which are bare. These coastal cliffs are for the most part composed of sheer vertical walls of packed snow or glacier ice rising from 1,200 to 2,200 feet high. Where the outward flow of the continental ice is channeled by variations in coastal surface features, some of the world's most impresssive glaciers exist: for example, Beardmore and Leverett Glaciers.

Surveys of the continent indicate that the current ice sheet is

receeding. For example, glacial features: such as, moraines, eskers, and rock striae, indicate that formerly the ice was approximately 1,000 feet higher than its current levels. Nevertheless the continental ice sheet is more completely developed than any ice cap elsewhere in the world.

Exposed land occurs in bare mountain peaks which protrude thru the ice cover; in valleys within the mountain ranges where the surfaces are blown clear of snow by the winds; and on coastal beaches and cliffs. Features such as polygons and rock beaches are found but only in isolated spots.

**Climate.** Antarctica has almost entirely an ice cap climate, with cold summers and extremely severe winters. Tundra is found only in small patches along coastal sections of the Palmer Peninsula. Except for these localized patches, the continent lies wholly within the isotherm of 32°F for the warmest month of the year. Lack of meteorological data from the interior of Antarctica has restricted efforts to determine climatic variations. However, enough data are available to determine that mean temperatures in the Antarctica are much colder than those of the Arctic.

Recent IGY data indicate that extremely low temperatures are being encountered on the inland ice sheet. A summary of six months temperature observations taken at the United States South Pole IGY station (1957) is shown in Figure 2. At this same station, on September 17, 1957, a record low temperature of —102° Fahrenheit was recorded.

A permanent high pressure system with its counter clockwise winds exists over Antarctica. This high pressure area is primarily the result of extreme cooling of the surface layers over the ice cap. An accompaniment is a severe temperature inversion. The predominantly south winds flow outward from the high pressure area of the interior plateau toward the ocean. These continental winds are of light force, but on the continental peripheries, winds of high velocity are commonplace. In 1903 Mawson recorded average wind velocities for a year of 45 miles per hour at Cape Denison. He also recorded days when the average wind velocity was 100 miles per hour for 8 to 10 hours, with gusts of 200 miles per hour. In contrast, the average winds at Little America, for the windiest month, averaged only 15 miles per hour and thru four years of observation the greatest velocity attained was an occasional gust to 70 miles per hour.

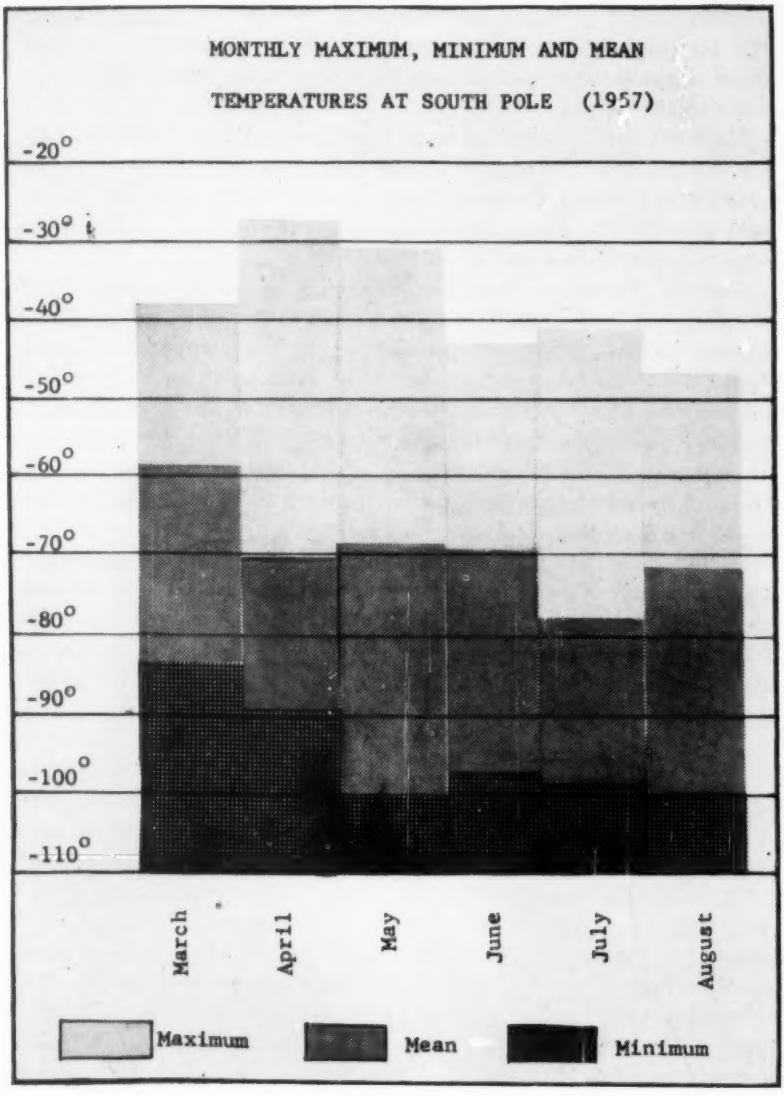
MONTHLY MAXIMUM, MINIMUM AND MEAN
TEMPERATURES AT SOUTH POLE (1957)
-20°
-30°
-40°
-50°
-60°
-70°
-80°
-90°
-100°
-110°
March
April
May
June
July
August
Maximum
Mean
Minimum

Fig. 2

The average precipitation thruout Antarctica is known to be very low, approximately that of the world's great land deserts. However, snow and particles of ice which are carried by the winds add to the difficulty of accurate measurement at the few stations which have been operating in Antarctica. What information is available indicates there is little precipitation in the interior while the coastal stations, where maximum precipitation would be expected, indicate 4 to 35 inches per year. Almost all precipitation is in the form of snow.

It is known that Antarctica has an important influence upon world climates. Its effects, extending northward, are undoubtedly a factor in temperature differences between the southern and northern hemisphere in which the southern hemisphere experiences lower mean temperatures. The full extent of its influence upon world weather conditions will become clear only when the complexities and variations of the weather of Antarctica are further analyzed.

**Flora and Fauna.** Except for rare occurrences of algae and water flora, vegetation is almost non-existent. Some algae mosses and lichens grow within crevices and in rock outcroppings where roots are protected from the winds. There are occasional growth of grasses and plants in the northern extremes of the Palmer Peninsula. Within the adjacent seas there are large growths of kelp, fungi, and diatoms.

Seals and whales are the only mammals that exist in Antarctic waters. Birds and fowl are plentiful and include penguins, albatrosses, petrels, shags, and sheathbills. No commercial value is attached to the birds and fowls, but whaling continues as an international industry of commercial significance.

**Natural Resources.** In the past and during recent times, the matter of possible mineral riches to be found in Antarctica has been brought forth. In view of present geological knowledge, only the law of probability would allow one to presume there are valuable deposits. Since every other continent contains deposits of commercial value, it can be predicted that Antarctica also has such a possibility. However, if resources were found on the continent, the problem of commercial exploitation would be almost insurmountable.

In the future it is possible, of course, that technological advances might open commercial possibilities at least for rare metals of high value. It is questioned, however, if such an attempt would not be

more costly than exploitation of lesser deposits in more accessible areas of the world. For the time being, it is a safe assumption that Antarctica will not become an area for a supply of raw natural resources.

## Political Aspects

In February 1952, Argentine nationals without official authority fired upon British citizens in an endeavor to drive them from the Palmer Peninsula. This incident was almost ignored in the focus of attention surrounding the then current Korean police action. Altho this armed clash was actually an overflow of the long smouldering Argentina-British dispute over the Falkland Islands, it demonstrates a potential area of continuing friction, especially if more claims and counterclaims are made with the passage of time. The multiple problems surrounding the issue of political claims which have been made on Antarctica are complicated by many varied considerations.

Several nations have made formal claims to portions of the continent, and almost all are based upon justifications which have doubtful or weak substantiations. The generally accepted political division of Antarctica is that which divides the continent into pie-shaped sections in which seven nations have staked out claims. The United States has demanded no territorial prerogatives on the continent and at the same time has avoided recognizing foreign claims. Some unofficial statements propose placing Antarctica under a United Nations Trusteeship.

Harmony has prevailed in recent Antarctic exploration and research. However, this situation might change if valuable resources were to be discovered, or if strategic or commercial values for the continent should be determined. Activities such as the IGY expeditions should help to cement friendly relationships provided IGY bases do not become the basis for future claims.

At least three major considerations should be kept in mind when conjecturing about the future of Antarctica:

1. Antarctica has a potentiality, already being exploited, as a scientific research laboratory. The advent of missiles, intercontinental air travel, and the startling space satellite development impart increasing significance to Antarctica as a place for both scientific research and observation. Such activities as exploration and analysis of the upper atmosphere, observations of radio waves,

light waves, cosmic analysis, and fixed star sightings from the geographical South Pole may well lead to new calculations which will be extremely valuable for missile guidance, satellite employment, and more accurate geodesy. Further collection, sorting, and analysis of climatological data will, of course, greatly assist in perfecting world weather predictions. This would result in many benefits to all the peoples of the world, especially to farmers, to the military, and to others who are now sometimes at the mercy of incomplete weather predictions.

2. Antarctica commands the southern water routes that have proved of great importance several times in history. These water routes, as mentioned earlier, consist of Drake's Passage around Cape Horn and the African Passage south of the Cape of Good Hope. Should the Panama Canal become blocked, control of the Drake Passage would be a military requirement for the United States or its allies. It is the only feasible means by which naval craft may be shunted from the Atlantic Ocean to the Pacific Ocean. Even at present some large aircraft carriers of the United States Navy cannot navigate the Panama Canal and must use this route. In addition, the many indentations and coastal irregularities around Cape Horn provide excellent potential submarine hideouts from which to prey upon military (naval) forces. Therefore, control of, or at least the neutralization of, the seas surrounding Antarctica, would become a necessity to the Western Hemisphere in time of war.

3. There is the remote possibility of the discovery of strategic resources, such as uranium. However, it can be expected that for the immediate future Antarctica will remain as only a potential source for strategic resources. Nevertheless, the Western powers cannot afford to overlook any possibilities for potential military use, and especially not permit unfriendly nations to advance and substantiate permanent political claims.

Regardless of which of the three considerations should loom most important in the future, it is certain that Antarctica will become increasingly an area of greater interest to all mankind. The IGY expeditions and other research activities that are being carried on may in themselves provide the necessary key to opening this vast continent to international prominence. But, even without new and spectacular developments, Antarctica will continue to remain an area to be closely observed and constantly re-evaluated in terms of its future potential.

# THE CITIES OF THE PHILIPPINES

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The number, distribution, and population of cities is both interesting and useful in the geographic presentation. What constitutes a city is a matter of definition, but normally it is taken for granted that the tabulation of data has sufficiently common basis the world around that enumerations, published by census bureaus can be accepted as roughly equivalent. Occasionally, however, the political institutions of an individual country promote the designation of cities on criteria other than those commonly utilized by geographers. In such cases tabulated and published data, when accepted at face value, yield misleading conclusions. The Philippines is one of these cases in which data, as published by the Bureau of the Census, yield an impression of urbanism quite different than that normally held by geographers.

It is not the purpose of this article to discuss the nature of the city, using Philippine examples. The present object is to describe the political origin of the city in the Philippines, and to present a list of Philippine city populations. For these purposes the criterion used in arriving at the totals presented in Tables I and II is the relative countinuity of compact settlement, in which the primary use of land is for purposes other than agriculture and farm residence.

## BASIC POLITICAL INSTITUTIONS AND STRUCTURE

The primary political division of the Philippines is the province, a unit developed by Spanish rule. The number of provinces has been growing slowly, and in 1957 there were 52 provinces. Spanish rule set the capital city of Manila apart from the provincial structure of the rest of the islands by royal decree in 1574. No city other than Manila has permanently stood outside the political structure of regional provinces. In 1957 all Philippine regional statistical tabulations gave data for 53 political units, the 52 provinces and the city of Manila. Tho Quezon City now is the official political capital, rather than Manila, this separation statistically remains operative.

The province is divided into municipalities, following the *municipio* originated by the Spanish. A municipality is essentially a

TABLE I*

| No. | Name of City | Date of Charter Mo./Yr. | Charter Area in Sq. Mi. | Charter Area, 1948 Population | Urban Area Estimated 1948 Population | Charter Area Estimated 1958 Population | Urban Area Estimated 1958 Population |
|---|---|---|---|---|---|---|---|
| 1 | Bacolod | 6/38 | 62.3 | 101,432 | 54,022 | 121,936 | 66,200 |
| 2 | Baguio | 8/09 | 22.2 | 29,262 | 26,400 | 35,177 | 31,300 |
| 3 | Basilan | 6/48 | 494.8 | 110,297 | 17,800 | 132,593 | 23,400 |
| 4 | Butuan | 6/50 | 284.0 | 31,628 | 12,588 | 38,021 | 16,700 |
| 5 | Cabanatuan | 6/50 | 110.7 | 54,668 | 34,437 | 65,719 | 39,600 |
| 6 | Cagayan de Oro | 6/50 | 170.6 | 46,266 | 25,450 | 55,618 | 31,500 |
| 7 | Calbayog | 7/48 | 403.7 | 79,503 | 13,003 | 95,274 | 20,100 |
| 8 | Cavite | 5/40 | 4.4 | 35,052 | 35,016 | 42,137 | 42,090 |
| 9 | Cebu | 10/36 | 128.3 | 167,503 | 149,123 | 201,362 | 174,300 |
| 10 | Dagupan | 6/47 | 17.1 | 43,838 | 32,213 | 52,699 | 36,700 |
| 11 | Davao | 10/36 | 748.4 | 111,263 | 51,793 | 133,754 | 61,800 |
| 12 | Dumaguete | 7/48 | 13.3 | 24,838 | 18,405 | 29,859 | 21,600 |
| 13 | Iligan | 6/50 | 127.4 | 25,725 | 14,074 | 30,925 | 18,100 |
| 14 | Iloilo | 10/36 | 29.9 | 110,122 | 101,260 | 132,382 | 124,500 |
| 15 | Lipa | 6/47 | 83.0 | 49,884 | 10,753 | 59,968 | 13,800 |
| 16 | Manila | 7/01 | 14.3 | 983,906 | 983,906 | 1,182,790 | 1,182,790 |
| 17 | Marawi[a] | 7/40 | 11.2 | 19,657 | 13,137 | 23,630 | 15,600 |
| 18 | Naga | 6/48 | 25.8 | 56,238 | 44,389 | 67,606 | 48,400 |
| 19 | Ormoc | 10/47 | 173.0 | 72,733 | 15,506 | 87,435 | 15,600 |
| 20 | Ozamis | 6/48 | 60.3 | 35,262 | 11,596 | 42,390 | 13,800 |
| 21 | Pasay | 6/47 | 5.7 | 88,728 | 88,728 | 106,664 | 106,664 |
| 22 | Quezon City | 10/39 | 58.2 | 107,977 | 98,610 | 129,936 | 122,900 |
| 23 | Roxas[b] | 4/51 | 33.3 | 32,353 | 14,161 | 38,893 | 16,100 |
| 24 | San Pablo | 5/40 | 51.0 | 50,435 | 23,392 | 60,630 | 27,300 |
| 26 | Silay | 6/57 | 65.2 | 35,570 | 9,066 | 42,090 | 11,300 |
| 26 | Tacloban | 6/52 | 49.1 | 45,421 | 32,824 | 54,602 | 35,800 |
| 27 | Tagaytay | 6/38 | 31.6 | 5,233 | 1,173 | 6,291 | 1,500 |
| 28 | Trece Martires | 5/54 | 3.8 | 1,741[c] | 1,741 | 2,232[c] | 2,600 |
| 29 | Zamboanga[d] | 10/36 | 644.6 | 103,317 | 21,589 | 124,202 | 24,900 |
| | | | | 2,659,852 | 1,956,155 | 3,196,815 | 2,346,964 |

* Numbers refer to locations on the accompanying map.

Sources of Data: For 1948, *Census*, for 1958, Bureau of Census and Statistics. Urban Area estimations calculated by J. E. Spencer.

[a] Name changed from Dansalan in June, 1956.

[b] Name changed from Capiz when chartered.

[c] The 1948 population of former Quintana barrio was 1741 in 1948, but its area does not correspond precisely with area of present chartered city which, by actual count, March 17, 1956, was 2232.

[d] Original area was 1124.4. This was reduced to listed area when Basilan was chartered, June, 1948, prior to 1948 Census.

political region, the first order subdivision of the province, and corresponds to the American county in most respects. Each has a settlement as its political capital; the name of the settlement is that of the municipality. The political capital need not be an urban settlement, and often is but a very small town. Municipalities are not as permanent as are American counties, either in number or limits; the number has grown steadily as Philippine population has grown over the centuries. There is a region known as the municipal

TABLE II

| Name of Political Unit | Urbanized Area in Square mi. | 1948 Census Population for whole Pol. Area | 1948 Urban Area Population | 1958 Urban Area Estimated Population |
|---|---|---|---|---|
| Manila | 14.3 | 983,906 | 983,906 | 1,182,790 |
| Pasay | 5.7 | 88,728 | 88,728 | 106,664 |
| Quezon City | 30.0[a] | 107,977 | 98,610 | 122,900 |
| Caloocan | 7.7[a] | 58,208 | 39,266 | 45,000 |
| Las Pinas | 2.3[a] | 9,280 | 6,116 | 7,500 |
| Makati | 5.2 | 41,335 | 41,335 | 51,000 |
| Malabon | 5.2 | 46,455 | 46,455 | 50,000 |
| Mandaluyong | 4.6 | 26,309 | 26,309 | 35,000 |
| Marikina | 7.0[a] | 23,353 | 15,683 | 21,000 |
| Navotas | 1.7 | 28,889 | 28,889 | 30,000 |
| Obando | 2.5[a] | 11,957 | 4,813 | 7,000 |
| Paranaque | 5.7[a] | 28,884 | 20,000 | 25,000 |
| Polo | 3.0[a] | 16,740 | 11,671 | 14,000 |
| Pasig | 8.0[a] | 35,407 | 30,000 | 46,000 |
| Pateros | 2.8 | 8,380 | 8,380 | 12,000 |
| San Juan del Monte | 2.2 | 31,493 | 31,493 | 35,000 |
| | 108.4 | 1,547,101 | 1,481,654 | 1,790,854 |

[a] Area listed excludes non-urbanized section of the political unit.

Sources of Data: For 1948, *Census*, for 1958 for Manila, Pasay, and Quezon City, the Bureau of Census and Statistics, for the municipalities surrounding Manila estimates are by J. E. Spencer, based upon multiple varied sources.

district, a sort of junior municipality, which is often the first stage in the development of the full-fledged municipality. Census data of all kinds totaled by provinces normally are sub-totaled by municipalities, but those for population do not clearly distinguish between totals for the political region and totals for the political capital.

Below the municipality is a smaller political region, the barrio, which is inherited from pre-Spanish political administration. This local district has no direct parallel in the political structure of the United States. Statistical tabulation often starts with the barrio totals, and certainly that for population commences here. The barrio is not a permanently fixed political region, but one subject to frequent rearrangement in limits, and one frequently newly created as population increases in any particular region.

Within the two cities of Manila and Baguio the barrio gave way administratively to a larger unit, since its functional utility was not apparent to American administrators. In all other towns and cities, however, the barrio has been maintained in a special form, the *poblacion*. Technically the *poblacion* is that single barrio in which are located the buildings of the political administration of the municipality or provincial capital. In most cases the boundaries

of the barrio forming the *poblacion* periodically are readjusted so that the *poblacion* is almost approximate to the actual built-up area of the capital settlement. In examining the population totals for municipalities, with an eye to determining the possible urban entities, the figure for the *poblacion* gives an approximation of the size of the settlement in most cases.

## THE CHARTERED CITY

When American control of the Philippines replaced that of the Spanish, the political charter of Manila as an independent city was reaffirmed, its actual political instrument patterned on that of Washington, D.C. The real administration of the city lay in the hands of the Governor General. During the American period only two such city charters were granted, to Manila the then regular national capital, and to Baguio, the summer capital in the mountains of northern Luzon. When the Commonwealth Period began in 1935, with a Philippine President at the head of the state, the political power derivable from direct control over the chartered city led to the chartering of ten more cities prior to the outbreak of World War II. After World War II another group of cities were given charters, all adding to the political patronage power of the Philippine President. None of these were totally removed from their political structures within provinces, but politically they were removed from the administrative control of the provincial governors and placed directly under the President's Office of Local Government, following an old Spanish precedent. Tho there are advantages to a city in holding a special charter, there also are disadvantages, and a few cities have thought seriously of giving up their charters, as Legaspi did in 1954. In 1948, at census time, there were 21 chartered cities, but by August, 1957, this number had increased to 29 (Fig. 1).

What is critically significant about the chartering of a city is the area and population involved. Often the area of compact settlement included so few people, and so little taxable wealth, that a more complex and costly administration could not either be justified or supported on the available tax collections, and, with political control the real objective it followed that the larger the city, the greater the political power to be achieved. The expedient early arose of including large sectors of rural territory containing outlying villages, towns, and taxable farm lands within the confines of

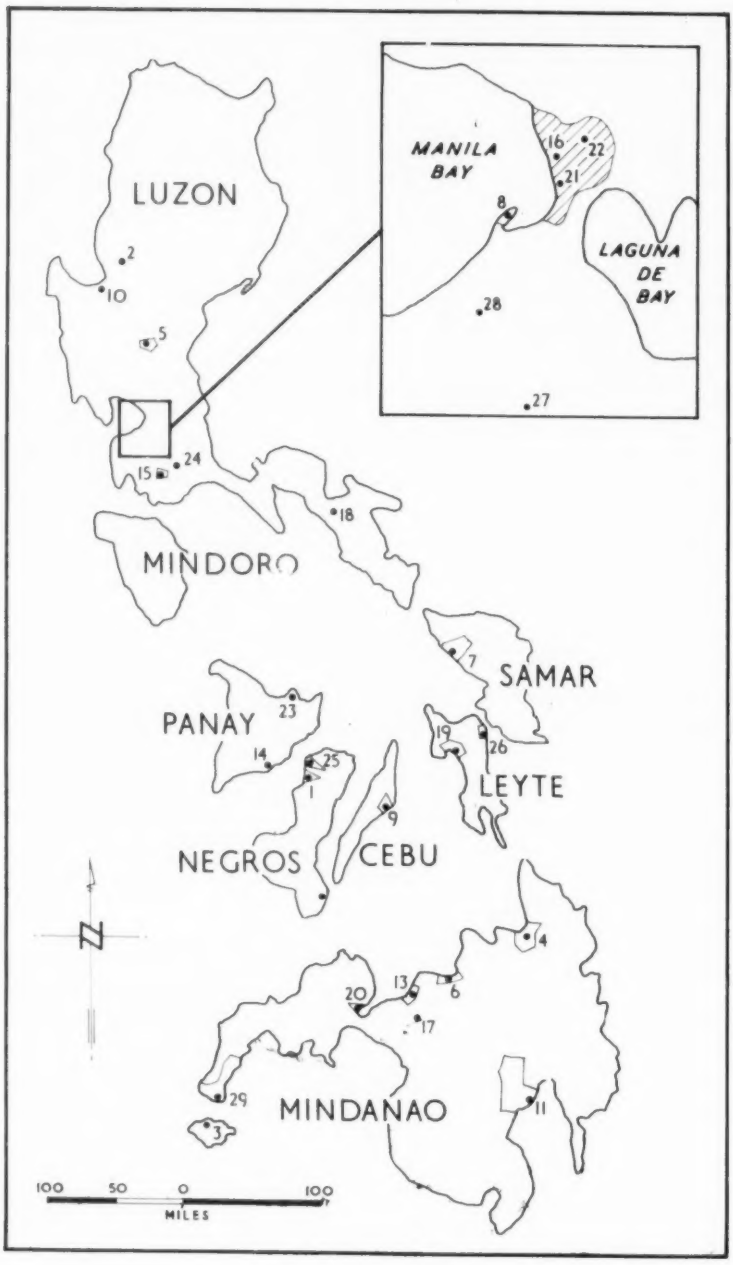
LUZON
MANILA BAY
LAGUNA DE BAY
MINDORO
SAMAR
PANAY
LEYTE
NEGROS
CEBU
MINDANAO
N
100 50 0 100
MILES

FIG. 1

the chartered city. In the cases of Manila, Baguio, Pasay, Quezon City, and Trece Martires, basic rearrangements of municipality structure and boundaries were required as the chartered areas were delimited. In the cases of Basilan, Davao, Iloilo, and Zamboanga, several municipalities were amalgamated into each city. Butuan annexed a relatively populous slice of the adjoining municipality. In all other cases, so far as I have been able to determine, the previously operative whole municipalities were completely turned into chartered cities, thus accounting for the irregularities of area and population.

The above expedient demanded that, for census purposes, all population residing within the chartered areas be listed as that of the cities in question, thereby markedly altering the concepts of city and urbanism. Casual reference to census data, therefore, suggests a very considerable list of large cities for the Philippines. Without detailed and painstaking reference to the full census returns and to large scale maps there is no easy way to determine the true sizes of most of these cities.

## The Case of Manila

A few special comments are necessary for the city of Manila. The old Spanish walled city contained an area of almost a square mile. In the early American period, when the present political boundaries of the city were established, the lines were set well beyond the limit of compact settlement to include several outlying villages, and considerable rural farm country. But Manila, like many other great cities, has overflowed its limits into the surrounding territory. It now is fringed by an urban zone politically organized into a large number of separate units. Two other, and more recently chartered, cities abut the political limits of Manila, and numerous municipalities, originally outlying separate entities, have been swallowed into the growing metropolitan region. Census tabulation, however, has not yet adopted the concept of the metropolitan region. There is, therefore, no easy way to determine the real size of Greater Manila. Table II makes an effort to reach this approximation on somewhat subjective criteria with only fair success. Not all of the area included in the territory for which Table II presents figures has yet been filled in by compact settlement. There still is room for horizontal growth of the Greater Manila within the area here tabulated, and certainly Manila can continue to spread further

into the open countryside. The city as a whole seems to be growing at a rate somewhat greater than the rate of urbanization for the country as a whole.

The accompanying Table I itemizes a variety of data for the 29 cities holding charters in August, 1957. Inspection will clearly indicate the degree of inflation resulting from the acts of chartering and considering all residents within charter areas as urban. Tho the 1948 Census data are getting out of date, and tho the 1957 populations are but estimates, interpolated from the 1948 data, this list may still be of considerable use in dealing with the Philippines until another census provides newer data.

## THE AREAL DISTRIBUTION OF MANUFACTURING IN INDIA*

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The traditional dominance of agriculture in India is slowly waning before an increasing tide of industrialization. Even tho India ranks "fifth among the industrial countries of the world"[1] the development is meagre in relation to the size and population of the nation, and is not comparable in volume and type to the great industrial foci of northwestern Europe, eastern United States and the Soviet Union. On the other hand, since the end of the Second World War the rate of industrial expansion in India has proven so phenomenal that it has attracted some attention in recent geographic literature.[2]

* This study was supported by the Graduate Faculty Research Fund of the University of Kentucky. Mr. William Jenkins of the Kentucky Research Foundation read an earlier version of the paper and offered helpful suggestions.

[1] Oscar H. K. Spate, *India and Pakistan: A General and Regional Geography*, E. P. Dutton & Co., Inc., New York, 1954, p. 272.

[2] Only a few of the recent articles appearing in American, British and Soviet geographical journals are listed here. Robert C. Kingsbury, "India's Industrial Growth," *Focus* by the American Geographical Society, Volume 6, No. 9, May 1956; John E. Brush, "The Iron and Steel Industry in India," *Geographical Review*, Volume 42, 1952, pp. 37-55; Pradyumna Prasad Karan, "Locational Pattern of the New Centers of the Indian Iron and Steel Industry" *Journal of Geography*, Volume LVI, No. 8, November 1957, pp. 366-374; William Kirk, "The Cotton and Jute Industries of India: A Study in Concentration and Dispersal," *Scottish Geographical Magazine*, Volume 72, No. 1, April 1956, pp. 38-52; V. M. Shtein, "Iron and Steel Industry of India and the Projected Plant in Madhya Pradesh," *Geografischesko obshchestvo SSR, Izvestiia*, Jan.-Feb. 1956.

The increasing importance of industry in India is working tremendous social and economic changes in the life of specific regions and of the nation.[3] Increasing industrialization is associated with changes in agricultural practices and production, in settlement patterns, in population composition and migration, in relation between castes and even in politics. An analysis of the nature and areal distribution of industry in India today, is essential to any understanding of these changes and their significance to specific industrial regions and to the nation.

Altho geographers have recognized the significance of industrialization few have seriously attempted the quantitative delimitation of regional intensity of manufacturing in India. In 1951 Trewartha and Verber published a map of the distribution of manufacturing in India on the basis of industrial workers employed in 1944.[4] Trewartha and Verber used both city and district units to portray the regional pattern of manufacturing. They recognized three generalized industrial regions—Northern, Western and Southern. An attempt is made in this paper to measure the areal distribution of Indian manufacturing in some detail by using the official 1950 employment data by district units.[5]

For purposes of this study every Indian district with 1500 or more workers employed in manufacturing in 1950, was considered an industrial district. The minimum number of 1500 employed as wage earners in manufacturing has been selected in order to eliminate the districts that are essentially non-industrial, even tho they may have some kind of manufacturing such as rice, flour, oil or other industries, found in all populated areas, to supply local needs. The map, Figure 1, therefore, portrays the excess number of workers over and above the number normal to non-industrial districts.

[3] For brief comments on social and economic implications of industrialization in Bihar-Bengal industrial area of India see P. P. Karan, "Geographical Landscape in Chota Nagpur," *Indian Geographical Journal*, Volume 25, 1950, pp. 10-13.

[4] Glenn T. Trewartha and James L. Verber, "Regionalism in Factory Industry in India-Pakistan," *Economic Geography*, Volume 27, No. 4, October 1951, pp. 283-286.

[5] In the use of district units (comparable to county units in the United States) for delimiting manufacturing regions the author has followed the example of Helen M. Strong ("Regions of Manufacturing Intensity in the United States," *Annals of the Association of American Geographers*, Volume 27, No. 1, March 1937, pp. 23-43) and Clarence F. Jones ("Areal Distribution of Manufacturing in the United States," *Economic Geography*, Volume 14, No. 3, July 1938, pp. 217-222). The use of data for towns would result in the elimination of a significant segment of Indian manufacturing enterprise located in suburbs and rural areas.

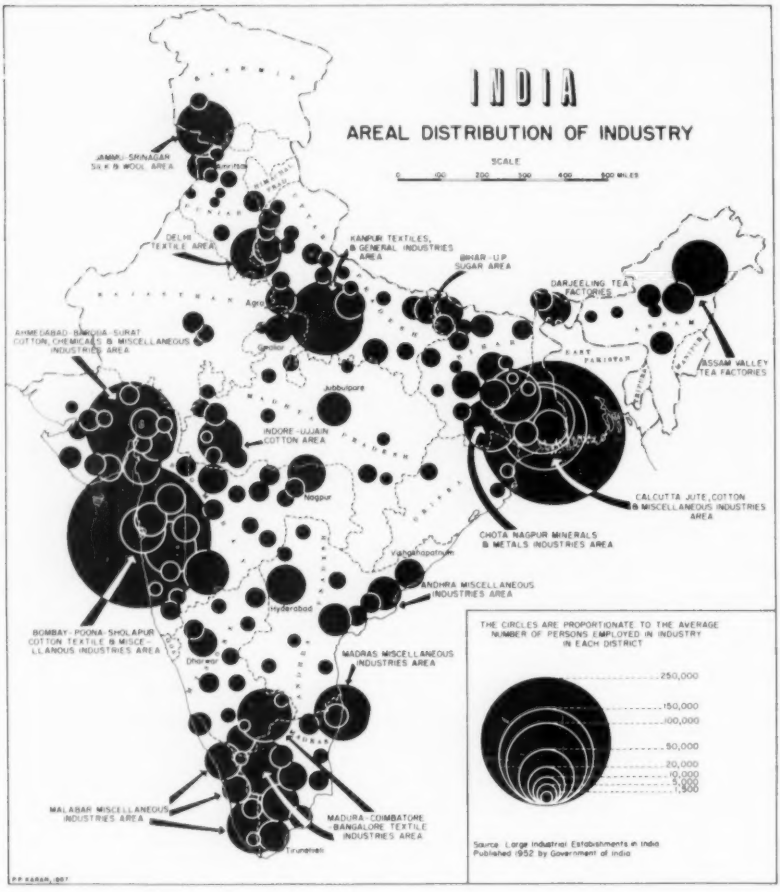
INDIA
AREAL DISTRIBUTION OF INDUSTRY
SCALE
0 100 200 300 400 500 MILES
JAMMU-SRINAGAR SILK & WOOL AREA
DELHI TEXTILE AREA
KANPUR TEXTILES, & GENERAL INDUSTRIES AREA
BIHAR-U.P. SUGAR AREA
DARJEELING TEA FACTORIES
ASSAM VALLEY TEA FACTORIES
AHMEDABAD-BARODA-SURAT COTTON, CHEMICALS & MISCELLANEOUS INDUSTRIES AREA
INDORE-UJJAIN COTTON AREA
CALCUTTA JUTE, COTTON & MISCELLANEOUS INDUSTRIES AREA
CHOTA NAGPUR MINERALS & METALS INDUSTRIES AREA
ANDHRA MISCELLANEOUS INDUSTRIES AREA
BOMBAY-POONA-SHOLAPUR COTTON TEXTILE & MISCELLANEOUS INDUSTRIES AREA
MADRAS MISCELLANEOUS INDUSTRIES AREA
MALABAR MISCELLANEOUS INDUSTRIES AREA
MADURA-COIMBATORE-BANGALORE TEXTILE INDUSTRIES AREA
THE CIRCLES ARE PROPORTIONATE TO THE AVERAGE NUMBER OF PERSONS EMPLOYED IN INDUSTRY IN EACH DISTRICT
250,000
150,000
100,000
50,000
20,000
10,000
5,000
1,500
Source: Large Industrial Establishments in India Published 1952 by Government of India

Fig. 1

Altho other indices such as value added by manufacture or amount of power consumed might have been used, the number of persons employed in manufacturing seems to afford the best single criterion for indicating the extent and importance of manufacturing.[6]

[6] John W. Alexander ("Industrial Expansion in the United States 1939-47," *Economic Geography*, Volume 28, No. 2, 1952, p. 128) gives an excellent list of reasons for using employment as a criterion in measuring the geographic significance of manufacturing. See also Chauncy D. Harris, "The Geography of Manufacturing," p. 297 in *American Geography: Inventory and Prospect* (James and Jones, editors, Syracuse University Press, 1954) for a list of reasons why geographers prefer use of data on employment for measurement of manufacturing distribution.

Figure 1, which is based upon the number of workers employed, reveals that there is little or no manufacturing in an irregular belt 200-500 miles wide stretching from Orissa to Rajasthan. The rugged topography of this area is characterized by vast sweeping slopes with areas of dense forest in the east and of dry, semi-arid hillsides and deserts in the west. The entire belt is sparsely populated and contains only a few scattered manufacturing centers.

To the north of this belt the density of industrial centers in some areas is such that they form a practically continuous pattern. An example of this is the area which may be called the Bihar-Bengal manufacturing belt. This diversified industrial region stretches westward from Calcutta along the Hooghly River toward the edge of the Chota Nagpur plateau bordering the valleys of the Damodar and Subarnarekha rivers. Other relatively continuous manufacturing areas are found on the Bihar-Uttar Pradesh border and around Delhi in the Ganges-Jumma interfluve. Between the Calcutta and the Delhi industrial foci is the rather compact manufacturing center of Kanpur in the upper Ganges valley. Many small, scattered manufacturing centers are located in Jummu, Amritsar, Agra, Gwalior, Jubbulpore, Allahabad, Patna and Darjeeling districts and in the Assam Valley. Outside of these centers, industrial activity is extremely restricted in much of Assam, north-central Bihar, eastern and northern Uttar Pradesh, Punjab, and Kashmir. Mountainous and thinly-peopled Assam and Kashmir require little in the way of manufactured wares, but Punjab, Uttar Pradesh and Bihar are important agricultural areas and, with their vast population, form a great market for a variety of manufactured products.

Manufacturing activity on the east coast is limited to the seaport of Vishakhapatnam, the populous deltas of the Godavari and Kistna rivers in Andhra and the districts of Madras, Tanjore and Tirunel veli. On the west coast of India, manufacturing is confined largely to the region bordering the Gulf of Cambay— an irregular belt stretching from Bombay Island southeast across the Western Ghats to the Sholapur district in the Bhima basin— and along the Malabar coast from Mangalore to Trivandrum. Both of these areas include several isolated centers of industry. The plateau region of Peninsular India has a great many minor manufacturing areas such as those in the Narbada and Tapti valleys, the compact Indore-Ujjain districts in the upper Chambal basin, the Nagpur-Wardha area between the Pench and Wardha rivers and in Hyderabad on the eastern edge of the plateau.

These Indian industrial areas are somewhat dissimilar from those of Western Europe and North America. In India the pattern is mainly one of small industrial establishments employing 15 to 25 workers. Larger factories employing hundreds of workers are common only in the principal industrial centers. However, as in European and American manufacturing regions there are areas dominated by one particular type of manufacture and others characterized by a wide diversity of industrial activity.

Five major regions of manufacturing activity stand out on the map (Fig. 1.) of areal distribution of industry: 1. the Calcutta Jute, Cotton and Miscellaneous Industries area; 2. the Chota Nagpur Minerals and Metals Industries area; 3. the Bombay-Poona-Sholapur Cotton Textile and Miscellaneous Industries area; 4. the Ahemdabad-Baroda-Surat Cotton, Chemicals and Miscellaneous Industries area; and 5. the Madura-Coimbatore-Bangalore Textile Industries area. The salient features of these five principal industrial areas are briefly summarized below.

### Calcutta Industrial Area

This manufacturing region includes Calcutta and the 15-mile long industrial strip along the Hooghly River. The dominating center of the area is Calcutta but the Hooghly River ports—Budge-Budge, Howrah, Serampur, Titagarh, Naihati—are industrially very significant. This is an area of differentiated light manufacturing with jute, cotton and electrical goods especially important. Here are to be found practically all the jute mills of India.[7] Calcutta has secondary industries including clothing, printing, and other industries characteristic of great economic and cultural capitals as well as industries associated with import and export trade.

### Chota Nagpur Industrial Area[8]

This region lying between the Damodar Valley coalfields and Bihar-Orissa iron ore mines is the main area of India for mineral

[7] For detail analysis of the industries of this region see S. P. Chatterjee, *Bengal in Maps*, Orient Logmans Ltd., Calcutta, 1949, pp. 90-93; and Tulsi Ram Sharma, *Location of Industries in India*, Hind Kitabs Ltd., Bombay, 1954, pp. 86-104.

[8] For details on this region see Pradyumna P. Karan, "Economic Regions of Chota Nagpur, Bihar, India," *Economic Geography*, Volume 29, No. 3, 1953, pp. 216-250, and Pradyumna Karan, "Iron Mining Industry in the Singhbhum-Mayurbhanj Region of India," *Economic Geography*, Volume 33, No. 4, 1957, pp. 349-361.

and metal industries—iron and steel, copper, aluminum—and associated heavy industries. In addition to the dominant iron and steel industries, it has a considerable diversity of other basic industries notably chemical, machinery, glass, cement and fertilizers. To a very important extent this region serves as the basic producer for the raw and semi-finished iron and steel materials used in the whole of India. Its dominant center is Jamshedpur which is highly specialized in the iron and steel industry. The Damodar Valley with its iron and steel mills and metallurgical industries has also a great development of fabricating industries of all kinds such as electrical goods, chemicals, cement and glass.

### BOMBAY-POONA-SHOLAPUR INDUSTRIAL AREA[9]

This is an area largely of cotton textile industry. The textile workers represent more than one-third of the national textile force. Cotton mills have been attracted by abundant water power, nearness to Bombay port, and availability of raw materials in a cotton producing region. The cotton mills are strung along the Western railway from Bombay across the Western Ghats up to Sholapur. The small, concentrated area of Bombay City and its industrial suburbs located on or close to the Bombay Harbor has the largest agglomeration of cotton mills. In addition to cotton mills, Bombay specializes in chemicals, engineering, food processing, printing, and a number of light consumer goods industries. Poona is less important industrially but Sholapur is an outstanding cotton textile center.

### AHMEDABAD-BARODA-SURAT AREA

This entire manufacturing area extending from Surat northwards thru Broach and Baroda up to Ahmedabad is one of the leading cotton textile belts of India. The dominating center of the industrial area is Ahmedabad. Broach, Baroda, and Surat by comparison have less development. Ahmedabad specializes in the manufacture of fine fabrics. Located on the Sabarmati River it lies amidst the predominantly cotton growing area. Ahmedabad and Baroda have also significant chemical and pottery industry. In Baroda industry has made a very rapid progress during recent times.[10]

[9] For details see C. D. Deshpande, *Western India*, Dharwar, 1948, pp. 250-252; and Sharma, *op. cit.*, pp. 16-19.

[10] For details Sharma, *op. cit.*, p. 31, 60-61 and Spate, *op. cit.*, pp. 605-606.

MADURA-COIMBATORE-BANGALORE AREA

Generally light consumer-goods industries dominate the industrial structure of this manufacturing area in South India. Since the advent of water power in Madras (Pykara scheme 1932) and Mysore (Mahatma Gandhi Hydro-electric Works 1947) the progress of industry has been phenomenal. Textile industry is important in the Tamilnad towns of Coimbatore and Madura. Spinning is dominant in Coimbatore suplying the handlooms of Madura and other Tamilnad towns. The cotton textiles industries of Madura-Coimbatore illustrate regional producing centers necessitated by the vast size and population of the country to serve regional markets. The industrial growth of Coimbatore—the chief center of the area—is based upon Pykara power and local raw cotton. It has a number of other miscellaneous industries such as tanneries, oil-presses and a large cement factory. In Bangalore hydro-electric power has given rise to considerable industrial development of a wide variety of goods. Bangalore is specially important for the manufacture of aircraft, machine tools, radio and electrical appliances and leather goods.

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## FIRSTHAND EXPERIENCES IN GEOGRAPHY FOR SECOND GRADERS[1]

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Oregon State College

In recent years where geography has been taught at all in the elementary school, it has been relegated largely to the intermediate grades (4th-6th). Pupils are then faced with fully developed maps, and after a brief explanation of the symbols, have been expected to recognize the value of maps and to use them intelligently. However, as Renner points out:

> One cannot simply exhibit a map and expect the student will learn merely by looking at it. The map is about as easy for the beginner to read as is a foreign language. When a teacher, therefore, hangs up a map, points to it, and asks the beginner a casual question, he is actually committing an educational enormity.[2]

[1] This article is part of a Doctoral Dissertation entitled: *A Framework for Developing Map Skills in Primary Grade Social Studies*, written at Stanford University, 1957.

[2] George T. Renner, "The Map in Modern Education," *Teachers College Record*, 40 (May, 1939), 706.

Instead we need a sequence of pupil experiences starting in the primary grades that will lay a foundation for the use of maps as a basic tool in learning. Also we want for children to develop a geographic point of view (an awareness that the way people anywhere carry on their basic human activities is related to the natural environment in which they find themselves) and that social institutions are dependent on resources. We want children to become aware of the pertinence of geographic data in understanding the different ways in which man adapts to and utilizes the environment in which he finds himself.

Observation and an attitude of thoughtfulness and discovery are basic to developing such a point of view.

## STRESSING OBSERVATIONS

Geographers agree that children should not be faced with a symbol on a map which does not bring to mind an image of the reality for which it stands. Elementary pupils need carefully graded and appropriately simple experiences in observing real landscapes in the immediate world around them. They must be given opportunities to think over, discuss, and relate what they have seen. They must be allowed to map what they themselves have seen and discussed, and to read simple maps made by others for which they now have adequate images.

Herein lies the importance of a geographic readiness program. The child must be helped from the start to observe and analyze the immediate world around him (home and school in first grade, neighborhood in second, local community in third). What he observes in these early years becomes the basis for comparing distant places to those with which he has become familiar. Geography, by its nature, provides in rich measure opportunity for such firsthand learning experiences, especially in the early grades. The child is thus able to discover many important facts thru his own observation of the immediate environment when a program is carefully planned to make effective use of firsthand experiences.

> Only as more and more teachers of geography at all levels provide first-hand discovery experiences abundantly for young learners, can we hope to make as much real progress in teaching elementary geography as is possible.[2]

This article suggests to the teacher possible firsthand experiences for second graders in their neighborhood.

[2] Edith Putnam Parker, "Gaining Insight into Human Problems," *Geographic Approaches to Social Education*, Nineteenth Yearbook, National Council for the Social Studies, Washington, 1948, 3-14.

### Observing on the Way to School

Ask the children to tell what they saw on the way to school. Encourage them to describe what they heard, smelled, and felt, in addition to what they saw. They should recall the natural landscape as well as the man-made features (tho the children need not be aware of the difference between natural and cultural features at this point). See if they can recall how many streets or roads they crossed. Let them estimate how many blocks they walked or miles they drove and how long it took them. They might describe the landmarks they noticed, a tall building, an empty lot, traffic lights—anything that stands out in their memory. If they are able to write, they might make a list of these items. If not, the teacher should jot them down for them. *This initial check on observation is done without any prior preparation.*

Now ask the children *to look again* on their way to school and *see what they notice when they are specifically looking.* Have them actually count the number of streets or roads they cross, the number of blocks they walk and check this with their previous estimate. Let them see if there were some important landmarks they had not previously noticed, or if landmarks were just where they thought they were. Having the child check himself in a second experience sets up a spirit of exploration. He is now in a position to make discoveries for himself.

### Field Trips

As many trips as possible should be taken in the neighborhood. It will help children to discover the relation of home and school to the neighborhood. They will become familiar in physical space as they observe natural and cultural features. They will become more aware of human relations as they observe the relation of neighborhood workers or farmers to their own lives. They will begin to discover the way in which people interact with their environment. Trips should be carefully planned in advance so that the purpose is clear and the children are able to derive full benefit from the excursion. A spirit of exploration and discovery should be aroused. There should be adequate preparation, but the pre-planning should not attempt to do what best can be accomplished on the trip or in the discussion and other activities to follow after the trip. The trip should be taken with the intention of mapping it.

The first trip should probably be a walk around the block on

which the school is located or the roads that bound it. The same type of things can be noticed as in the observations previously made between home and school. Directions should be noticed in relation to the school. Attention could also be called to where these streets or roads extend to familiar places. Relative location of features should be noted. For example, is the water hydrant in the middle of the block, nearer to one corner or to the other? Where is the wooded area or creek in relation to school? If a mailbox is passed, on which corner is it in relation to the school? Locate children's homes if any are passed. Look for important geographical phenomena. Notice slope of land, that drainage of homes, buildings, lawns is toward the street or road. Watch for variations in elevation, if any. Look for signs of erosion, if any are easily visible. Where are water bodies? Where are trees growing? Where are telephone poles and electric wires placed? Where are sewers placed? How are irrigation ditches laid out? It might be worthwhile to take the trip around the block or boundary roads of the school at the time the postman is making his deliveries, when road repairs are being made, when some construction is taking place, when water mains are being laid or repaired, when a telephone wire is being installed. Such trips can be repeated to observe seasonal changes in trees and flowers or crops, or after a heavy rain, to learn something about drainage. It is well worth taking many walks in the same area for different purposes. A later walk may be a timed walk, with no stops being made for observations. One such walk may be a paced walk, where the number of steps are counted from intersection to intersection and from one feature to another to determine distance roughly. The teacher or a parent might drive the children in a car or truck over the same route and clock the distance on the odometer so the children may learn to judge the "feel" of having walked that distance.

Other trips might be related to the basic human activities that can be observed in the neighborhood. The class might take a walk to the shopping area to visit the grocery or bakery, a furniture store, a shoe repair shop, a print shop, a flower shop. They might watch the milk or produce being delivered or visit a gas station to see cars being washed, lubricated, and serviced, or to see the large underground gas tank being replenished. Such trips might be taken for the purpose of seeing processes taking place or to note the great variety of stores and what purposes they serve. Children

might be encouraged to question where some of the products come from. They might be observing with the intention of building a model or drawing a rough sketch of the whole shopping area, or they might be concerned with the particular layout of the supermarket or bakery, both with the selling area and the behind-the-scenes area.

In a rural neighborhood similar trips can be taken to the nearby village. The class might visit the farm-equipment sales and repair facilities; the feed, grain, and fertilizer store; the cooperatives. They might also observe the gas tank being replenished at the gas station, or trucks stopping by to be serviced. Depending on the area and the size of the village, there might be various types of processing plants. There might be a railroad switching yard. There might be a firehouse, constable's office, telephone exchange, or postoffice to visit. Again, the class should observe with the intention of reproducing the village facilities in their relative location, or center their attention on a particular plant layout in which they want to analyze a given function or process.

### Observing Basic Human Activities

In relation to any of the basic human activities there are many of the following that may be located in the neighborhood community and worthy of a visit:

1. Protecting and conserving: a police station, sheriff's office, firehouse, hospital, reservoir; 2. Producing, distributing, consuming: any factory, an upholsterer, milk bottling plant, small bakery or large commercial bakery, utilities plants, processing plants; 3. Transporting: bus terminal, streetcar barn, railroad tracks or terminal, water bodies, boats, bridges; 4. Communicating: postoffice, telephone exchange, radio or TV station; 5. Expressing aesthetic and religious impulses: museums, churches, places of beauty; 6. Providing recreation: Community Center; swimming area, parks, wooded areas, playgrounds; 7. Providing education: other schools—elementary or the Junior and Senior High School these children will attend, library; and 8. Organizing and governing: this function is necessary for the successful operation of many of the activities listed above. In farm areas there are additional organizations for cooperative buying and selling; use and repair of farm machinery; irrigation, drainage, and erosion prevention, etc.

These trips should preferably be within walking distance so that other things can also be observed along the way. Direction of

travel should be noted, and among the later trips children might have with them very simple maps showing the route they are following. Slope of the land should be noticed and how it feels walking up an incline compared to walking down, even when the incline is slight. The time of day and where the sun is in the sky might be observed. The season of year might be mentioned and what is different in contrast to a trip that might have been taken a month or more ago. Landmarks might be located. Again, observations should be made with the intention of reproducing it in some manner in the classroom. Any time a water body, hill, or tracks of some kind are passed, their relative location should be noted. In the open country, crops, forest, cattle in the fields, sheep, etc., should be noted. Anything of geographical import should be utilized. However, no one trip should try to do too much. If enough trips are taken, new concepts are gradually added as old ones are renewed and extended.

One special trip might be to go to the top of a hill or tower where the neighborhood can be seen from above. Preferably such a trip might come after several previous trips have been taken so that the children might recognize routes and places and see them in a new perspective from this vantage point. Another special trip might be a mile-long walk so that a mile has a tangible feel in the muscles and does not just remain a word or a symbol for a scale on a map. The blocks or intersections might be tallied and the time noted so that this too could be added for concept building. One trip might be a short ride on a bus in the neighborhood to notice the exact route.

## PURPOSE OF TRIPS

What purpose do all of these trips serve? As Mitchell points out:

> The chief program for geographic *intake* in these early years, lies in trips—explorations of the environment. Provision for *outgo*, equally important, is made within the classroom [after the trip] through "adaptable materials" . . . [more of this later]. Trips . . . become the basis of the curriculum in the younger years—[up to about 7] when children have mastered the relationships in their immediate home environment sufficiently to widen their explorations, but are not yet mature enough, experienced enough, have not yet a large enough store of images to carry on investigations in situations which are not immediately before them.[4]

Scarfe also emphasizes the need for contact with the immediate environment:

> No geography worthy of the name is possible without constant reference to a com-

[4] Lucy Sprague Mitchell, *Young Geographers*, John Day Co., New York, 1934, 22.

pletely understood home region. . . . Persistent contact with reality is necessary. . . .[5]

However, if trips are to serve more than a passing interest, the teacher must prepare herself to make good use of them. How?

It becomes the first task of a teacher who would base her program with young children on an exploration of the environment to explore the environment herself. She must know how her community keeps house—how it gets its water, its fuel, its electric power, its food, and who are the workers that make the community function. She must know where the pipes in her room lead to, where the fuel is kept in the school, when the meters are read and by whom. She must know the geographic featuers which characterize her particular environment and strive constantly to see how they have conditioned the work of which she is a part and how they have been changed by that work. . . . She gathers this information in order to place the children in strategic positions for making explorations, in order to plan trips which will lead to significant discoveries, in short, in order to use her environment as a laboratory. . . .[6]

### IN CONCLUSION

Educators and geographers who have worked with children agree: primary children should start with concrete experiences—observation in the immediate environment. Mapping and map interpretation follow bit by bit as meanings for the symbols to be used slowly develop. This article suggests many firsthand experiences possible to undertake with second grade children in exploring their neighborhod. Such experiences should then be followed up with discussion, mapping by the children of what they have seen, and reading of simplified maps that use symbols for which they have built adequate images. Experiences in making maps and in using maps at this grade level will be discussed in later articles to follow.

[5] N. F. Scarfe, "Designing the Curriculum to Develop Geographic Concepts," *Journal of Geography*, 55 (February, 1956), 57-67.

[6] Mitchell, *op cit.*, 25-26.

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## AN INVENTORY OF MOTIVATING POSSIBILITIES FOR THE TEACHING OF GEOGRAPHY

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Teachers generally do not prefer to teach geography in a routine or customary manner. But often teachers are unaware of the numerous projects, techniques, devices, and activities that can make lesson procedures stimulating and meaningful.

Repetition, routine, and the general channeling of student learn-

ing into narrow and shallow confines invariably will cause student interest to wane. Even a naturally vitalized subject such as geography will show evidences of teacher-pupil lethargy without the utilization of varied, provocative assignments.

The following checklist is designed primarily to alert teachers of geography to some classroom activity possibilities under a broad coverage of ideas. No attempt is made to expound upon any one activity inasmuch as the discretion of the teacher should be employed to align the teaching procedures to the level, needs and interest of the class. Each of the suggestions has been used advantageously in the teaching of geography.

## MOTIVATING POSSIBILITIES

1. Advertisement Collections
2. Booklets
3. Book Reports (travel)
4. Bulletin Board Displays
5. Community Resources
6. Conservation Cartoons and Slogans
7. Commercial Free and Inexpensive Teaching Aids
8. Country Costume Party
9. Contests, Drills, and Reviews
10. Chart Making
11. Chalk Murals
12. Debates
13. Diagrams
14. Decorating Room for Unit Theme
15. Directed and Supervised Study
16. Did You Know Hour
17. Diorama
18. Diary of Travel
19. Doll Costumes
20. Demonstrations
21. Exhibits and Displays
22. Experience Stories
23. Essay, Editorial Writing
24. Field Trips
25. Folk Dancing
26. Foreign Food Party
27. Fair (International)
28. Field mapping
29. Filmstrips-commercial and classmade
30. Foreign Collections of Toys, Jewelry, Christmas Cards etc.
31. Guide Sheets
32. Games and Quizzes
33. Graph Making
34. Group Presentations and Reports
35. Glossaries
36. Here and There Study
37. Hobby Hour
38. Inquiring Reporter
39. Listing
40. Laboratory Methods
41. Letter Writing for Materials
42. Lantern Slides
43. Movies-Commercial (and classmade)
44. Murals
45. Model Construction
46. Map Drawing and Making
47. Map Reading and Interpretation
48. Museum
49. Newspapers (geography editions, class made)
50. Name Source Research
51. News Reporting
52. News Clipping Collections
53. Outlining
54. Plays
55. Penpals
56. Poetry Writing and Reading
57. Panel Pictures
58. Puzzles and Anagrams
59. Problem Solving Assignments
60. Panel Discussions
61. Pictograms
62. Picture Collections
63. Post Card Collections
64. Pamphlet Table
65. Puppets and Marionettes
66. Posters
67. Picture Drawing

68. Questions formulated for Pupil Exchange
69. Radio-TV
70. Resource People
71. Reports-Written and Oral
72. Role Playing and Sociodrama
73. Reading Silently and Orally
74. Recording
75. Show and Tell Period
76. Spelling Lists of Geography Terms and Places
77. Singing
78. Scrap Book
79. Surveys
80. Snapshot and Picture Taking
81. Specimen Collections
82. Stamp Collection and Exchange
83. Tests-Pupil Composed
84. Travel Book
85. Travel Bureau
86. United Nations Projects and Pagents
87. Viewers-Commercial Inserts
88. Workbook Corner
89. Where Am I Locational Drill
90. Weather Bureau

# THE EVALUATION OF GEOGRAPHY TEACHING*

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**HENRY J. WARMAN**
Clark University

There is considerable reason to expect that geography training, or the teaching of things geographic, will receive more emphasis in the years to come. Such empasis may come as a result of the increase of speed in every facet of our daily life, especially that of our transportation facilities which allow greater distances to be covered in shorter periods of time; the higher wages earned by many which permit more extensive travel and the shift in attitude from "saving for a rainy day" to "enjoy it while you may." Hence shorter working hours per day and week, with more hours of leisure, with extended vacation periods varying with lengths of service, coupled with more money and faster transportation afford opportunity for more people to travel greater distances in shorter periods of time. Then, too, intermingling of cultures calls for an understanding of habits, attitudes and reactions of others. There is also a need for understanding the increased complexity of international contacts since the United States has assumed so much of the role of leadership. Just as the Stone Age man changed as the result of the discovery of minerals and the age of the Industrial Revolution changed the pattern of manufacturing from that of the

*This article and chart accompanying it grew out of a Summer Workshop in Geographic Education held at Northwestern University, 1957.

home to the factory so will our lives be altered in this age of space travel and changing regional complexity. Since geography places man in regions more teachers will need to be trained in things geographic to fit man into this new age.

In the training of these new teachers and in the improvement always sought in teaching situations thruout the country there will arise the necessity of evaluating what has been done. Evaluation may be termed the observation of and interpretation of the sum total of a teaching experience for the motivation, growth, and improvement of an individual. It includes both subjective and objective analysis. It is a means of determining the many aspects of a given situation in order to estimate better the amount of comprehension, the professional aptitude and the attitude of the educator. It provides also a way of judging the understanding of educational processes and concomitancies by the teacher. An upgrading in all of the measurements mentioned above should result in an enrichment of the education of the students. How to do the upgrading is always a major problem.

Up to the present time many devices have been proposed and a considerable number developed for evaluating teaching effectiveness. For the most part, they have been based chiefly on such general phases as personal attributes, professional attitudes, academic preparation, procedure and quality of teaching. An excellent example of such evaluating devices is that prepared by Dr. L. S. Flaum of Drake University.[1] It is really a self-evaluation inventory called "*What Is a Good Teacher?*" Major criteria are listed as questions. Here are some samples. "Do I have an adequate concept of the Aims of Education? Am I able to develop motivation on the part of the learner? Is my classroom a Laboratory of Work rather than a Recitation Room? Am I able to develop much of the work of the classroom around large centers of interest rather than around conventional subject matter? Am I maintaining my own professional development?" All of these phases need to be considered. However, when it becomes the duty of the evaluator to rate a student under his supervision or for the student to rate himself for each of the subjects in rather detailed fashion before the student is permitted to graduate, the criteria for the evaluation processes of the last two phases above, namely, academic preparation and pro-

[1] Iowa Commission on Teacher Education and Professional Standards, *What Is a Good Teacher?* Des Moines, Iowa 1949.

Name of Teacher _____ Subject or Field _____
Date _____ Topic _____
Number of Visit _____ General Aim _____
Name of Visitor _____ Specific Aim _____

| I. GEOGRAPHIC ASPECTS | | II. RELATIONSHIPS | | III. MATERIALS | | IV. EVALUATION | |
|---|---|---|---|---|---|---|---|
| A. Physical (Natural) | 1 Space Factors<br>2 Rocks & Minerals<br>3 Weather & Climate<br>4 Landforms<br>5 Drainage<br>6 Vegetation<br>7 Soils<br>8 Animal Life | A. To Other Geographic Learnings | Method of Presentation<br>a<br>b<br>c<br>d<br>e<br>f<br>g | A. Kinds of Visual Aids | 1<br>2<br>3<br>4<br>5<br>6 | A. Allocation of Time | 1 Time Justified<br>2 Are assignments clear |
| B. Cultural (Man-made) | 1 Population<br>2 Social Organization<br>a Family Structure<br>b Livelihood "<br>3 Problems in Physical-Cultural Association | B. To Other Subjects | 1 Art<br>2 Language & Lit.<br>3 Mathematics<br>4 Music<br>5 Science<br>a Natural<br>b Social ( Hist. etc. ) | B. Arrangement & ord of use | 1 Balance<br>2 Quality – Size<br>3 Visibility<br>4 Attractiveness<br>5 Displayed but not used | B. Emphasis | 1 Items Stressed<br>2 Motivation<br>3 Use of terms<br>4 Specific items of interest |
| C. Social | Contributions<br>a Individual<br>b Racial<br>c Regional | C. To Life Situations | 1 Current Happenings<br>2 Leisure-time Activities<br>3 Independent work | C. Suitability for Grade & Age Level | 1 Grade Level<br>2 Vocabulary<br>3 For Day's Presentation<br>4 For "Bridging" | C. Approach & Achievement of Goal | 1 "Life Motif"<br>2 Perm. Ed. Value<br>3 Change in attitude of students |
| D. Additional Comments | | | | | | | |
| V. SUMMARY STATEMENT OF PERFORMANCE | | | | | | | |

FIG. 1

ceedure and quality of teaching, are of most value. The accompanying chart and the key for its use represent attempts to establish criteria for evaluating the quality of *Geography* taught (Fig. 1). Institutions responsible for training teachers are recognizing more and more that one needs to know more than just "how to teach"; he needs to know how to teach *History*, how to teach *Mathematics*, how to teach *Civics*. This paper is concerned with how to teach *Geography*, and particularly *how to measure it*.

## EVALUATION CHART

The real function of the chart and key is to supply the observer and the observed with a guide to the major and minor items that might be included in a "good" geographic learning situation. It is not intended that the total chart should be used on every visit but it is assumed that the evaluator makes periodic checks. By keeping duplicate copies thru the total evaluation period he would not only have a record of the individual's ability to use techniques of teaching but also secure indications of quality of preparation as well as quality of material, how it was presented and the degree of coverage.

It is impossible to put on one chart all the subdivisions. Nor

would all of them apply to each and every situation. The expanded, detailed outline for critical analysis is given to assist the evaluator, but—and here might well be the greatest significance of the entire evaluation scheme—the one to be observed has specific ideas of what he is expected to know and do.

Horizontally the chart shows the physical (natural) aspects and the cultural aspects. The latter is divided into subheadings—man-made (individual) and group-made (social) features. The vertical columns to the right of the Geographic Aspects column are given headings of Relationships, Materials, and Evaluation. Provision also is made for estimate (in columns) of time allocated to each item. Such a feature on a chart gives the evaluator an insight of the observed one's ideas of the importance of the various geographic criteria; a priority rating, so to speak, of the elements under his discussion. At the bottom of the chart there are additional spaces for comments and a final summary statement of the total performance.

CRITERIA FOR THE EVALUATION OF GEOGRAPHY TEACHING

I. Geographic Aspects
  A. Physical (nature-made)
    1. Space factors
      a. Location
      b. Size
      c. Shape
    2. Rocks and minerals
      a. Resources available
        1. Strategic
        2. Essential
        3. Non-essential
        4. Replaceable
        5. Non-replaceable
      b. Distribution of resources
        1. Location
        2. Economic value
    3. Weather and climate
      a. Temperature
      b. Rainfall and humidity
      c. Pressure and winds
    4. Landforms
      a. Plains
      b. Plateaus
      c. Mountains
    5. Drainage
      a. Surface waters
      b. Underground waters
      c. Ocean and its littoral

6. Natural vegetation
7. Soils
   a. Composition
   b. Characteristics
   c. Utilization
8. Animal life

B. Cultural (man-made)
1. Population
   a. Numbers
   b. Distribution
2. Societal organization
   a. Family structure
      1. Tribe
      2. Clan
         a. Matriarchal
         b. Patriarchal
      3. Heritage
         a. Religious, linguistic, racial
         b. Historical background
      4. Contributions to
         a. Science
         b. Industry
         c. Art
         d. Literature
      5. Homes
         a. Architectural style
         b. Materials used
         c. Neighborhood structure
         d. Contributions of the home to society
   b. Livelihood Structure
      1. Activities
         a. Agriculture
            1. Cropland
               a. Sedentary agriculture
               b. Shifting agriculture
               c. Plantation agriculture
            2. Animal land
               a. Types of animals
               b. Special handling of
         b. Industry
            1. Manufacturing
            2. Mining
            3. Fishing
         c. Professional services
         d. Trade and transportation
         e. Communication
         f. Government, law, and jurisprudence
         g. Education, welfare, and health
         h. Recreation
         i. Militarism
   c. Problems in physical-cultural associations
      1. Adequate resource base

2. Stage of technological development
3. Nationalistic trends

C. Social Contributions
1. Individual
2. Racial
3. Regional

D. Additional comments

II. Relationships

A. To other geographic learnings
1. Method of presentation
a. Oral
b. Written
c. Socialized recitation
d. Question and answer
e. Project
f. Unit
g. Contract

B. To other subjects
1. Art
2. Language and literature
3. Mathematics
4. Music
5. Science
a. Natural
b. Social (history)

C. To life situations
1. Current happenings
2. Leisure-time Activities
3. Independent work

D. Additional Comments

III. Materials

A. Kinds of visual aids
1. Books—single—multiple
2. Magazines and newspapers
3. Globes and maps (types)
4. Charts
5. Bulletin boards—news items
6. Blackboards
7. Easels, display cases, pictures
8. Curios, Collections
9. Projected audio-visual aids
10. Other

B. Order and sequence of use.
1. Balance
2. Quality and size of material in relation to viewing possibilities
3. Visibility
4. Attractiveness of arrangement
5. Displayed but not used

C. Suitability
1. Grade level

2. Vocabulary
3. For day's presentation
4. For "bridging"

D. Additional Comments

IV. Evaluation

A. Allocation of time
1. What proportion of time
a. Evenly spread
b. Hurriedly done with too many items
c. Were significant items stressed?
2. Can the time be justified?
3. Are the assignments clear?
a. Can the student go on from here?
b. Does the student see the goal of the teacher?

B. Emphasis
1. Important items stressed
a. Theme—how followed; when attacked
b. Selection
2. Motivation
a. Amount of stimulation
b. Justification of job to encourage further work and thinking
3. Use of terms of the field
4. Specific items of interest
a. Does equipment provide a pleasant, cheerful, healthy invigorating environment?
b. Does material provide wide variety of valuable learning experience?
5. Conclusion
a. How conclusive?
b. What was concluded?

C. Approach and achievement of goal
1. Is "life motif" evident in its regional setting?
2. Will material help realize students' potentialities?
3. Does material add value to permanent educational outcomes?
4. What change, if any, has taken place in the student's attitude?

D. Additional comments

V. Summary statement of performance

## Reservations for November Meeting

Have you made your hotel reservations for N.C.G.E. November meeting in New York City? The management of the Hotel Statler Hilton has agreed to the following special rates for those attending the New York City meeting: singles are $8.00; doubles, $6.00 per person; and twins, $7.50 per person. When you write for reservations, please mention N.C.G.E. or these special rates will not be granted. Send reservations to: Mr. George Maher, Front Office Manager, Hotel Statler Hilton, New York 1, New York.

# NATIONAL COUNCIL AT WORK

*PRELIMINARY PROGRAM*

*NATIONAL COUNCIL FOR GEOGRAPHIC EDUCATION*

Statler Hotel, New York City, New York, November 28, 29, 1958

Theme. WIDENING HORIZONS THROUGH GEOGRAPHIC EDUCATION

**Friday, 9:00 a.m. First General Session** ..... **Grand Ballroom**

GEOGRAPHIC EDUCATION AROUND THE WORLD

Presiding ..... Mary Viola Phillips
President, National Council for Geographic Education
University of Pittsburgh, Pittsburgh, Pennsylvania

*Welcome to New York City* ..... Robert F. Wagner
Mayor, New York City, New York

*Greetings* ..... John J. Theobold
Superintendent of New York City Schools
New York City, New York

*Response* ..... Ina Cullom Robertson
Past President, National Council for Geographic Education
State Teacher's College, Valley City, North Dakota

*Brown, White, Green, and Black:*
*Lands and Life in Southwest Asia* ..... George B. Cressey
Syracuse University, Syracuse, New York

*The Standard of Land Use Within the "Common Market"* Samuel Van Valkenburg
Clark University, Worcester, Massachusetts

*Geographic Education in the Soviet Union* ..... Chauncy Harris
University of Chicago, Chicago, Illinois

**10:45 a.m. Sectional Meetings**

TOOLS AND TECHNIQUES FOR TEACHING WORLD REGIONS

A. MAPS FOR GEOGRAPHIC EDUCATION ..... *West Room*

Presiding ..... James M. Jennings
University of Pittsburgh, Pittsburgh, Pennsylvania

*Map Sources and Map Uses in the Teaching of Geography* .... Arnold J. Kreisman
Geographer, Aero Service Corporation
Philadelphia, Pennsylvania

*Maps and Census Data* ..... Alford Archer
U. S. Department of Commerce, Bureau of Census,
Washington, D.C.

*Map Needs and Ways of Using Maps* ..... Joseph Green
Brooklyn Technical High School
Brooklyn, New York

*Making Land Utilization Maps* ..... E. Joan Wilson Miller
Indiana University, Bloomington, Indiana

Resource Persons:
Robert H. Fraser, Administrative Assistant, Delhaas Joint School District, Bristol, Pennsylvania
Arch C. Gerlach, Map Division, Library of Congress, Washington, D.C.
Frances M. Hanson, District of Columbia Teachers College, Washington, D.C.

Richard E. Harrison, Cartographer, Ginn and Company, New York City, New York
C. M. Strack, Henderson State College, Arkadelphia, Arkansas

B. HOW TO PREPARE AND USE MAP SLIDES AND PICTURE SLIDES EFFECTIVELY ..... *Grand Ballroom*
Presiding ..... Herbert Vent
Air University, Maxwell Air Force Base
Maxwell Field, Alabama
*When We Take a Photograph for Geographic Education* ..... Mamie L. Anderzhon
William Beye School, Oak Park, Illinois
*New Map Slides for Teaching Geography* ..... Robert J. Goodman
Wayne State University, Detroit, Michigan
Resource Persons:
Robert E. Gabler, Western Illinois University, Macomb, Illinois
George Langdon, State Teachers College, West Chester, Pennsylvania
E. Willard Miller, Pennsylvania State University, University Park, Pennsylvania
Robert Redden, New York State University College for Teachers, Buffalo, New York
Zoe A. Thralls, University of Pittsburgh, Pittsburgh, Pennsylvania

C. PROCEDURE FOR THE DEVELOPMENT OF A STUDENT GEOGRAPHY EXHIBIT ..... *East Room*
Presiding ..... Virginia Morrison
Wilkinsburg Public Schools, Wilkinsburg, Pennsylvania
*How to Organize and Conduct a Geography Show* ..... Mary Logan
Ben Avon School, Pittsburgh, Pennsylvania
*How to Prepare and Evaluate Materials for Student Exhibits* ..... Linnie B. James
Forest Hills Junior High School, Pittsburgh, Pennsylvania
Resource Persons:
Viola M. Bonn, Junior High and Junior College, Bismarck, North Dakota
John P. Marchak, West Chester Joint Junior High School, West Chester, Pennsylvania
Mabel L. McGirr, Vice Principal, North Bethesda Junior High School, Montgomery County, Maryland

D. NATIONAL ASPECTS OF CONSERVATION ..... *Washington Room*
Presiding ..... Eleanor E. Hanlon
Syracuse University, Syracuse, New York
*California's Water Requirements* ..... Chester F. Cole
Fresno State College, Fresno, California
*Conservation—For What?* ..... *David Lowenthal*
Research Associate, American Geographical Society
New York City, New York
Resource Persons:
H. Phillip Bacon, Teachers College, Columbia University, New York City, New York
Sidney E. Ekblaw, University of Kansas City, Kansas City, Missouri
Daniel Jacobson, State Teachers College, Upper Montclair, New Jersey
Lorrin Kennamer, University of Texas, Austin, Texas
Alan P. Mewha, State Teachers College, Indiana, Pennsylvania

**11:50 a.m. State Coordinator's Luncheon ..... Georgian Room**
(Open to all members and guests)
Presiding ..... Herbert H. Gross

Director of State Coordinators, NCGE
Concordia Teachers College, River Forest, Illinois
Introduction of State Coordinators
Panel Discussion:

HOW TO IMPROVE THE STATUS OF GEOGRAPHY IN THE STATES

Panelists:
Lorrin Kennamer, Second Vice-President, National Council for Geographic Education, University of Texas, Austin, Texas
Erna G. Gilland, Curriculum Coordinator in Geography Education, California, Pennsylvania
Dorothy W. Furman, Bureau of Curriculum Research, Board of Education, New York City, New York

**1:30 p.m. Second General Session** ..... **Grand Ballroom**

GEOGRAPHIC EDUCATION ACROSS THE CURRICULUM

Presiding ..... Adelbert K. Botts
First Vice President, National Council for Geographic Education
State Teachers College, Trenton, New Jersey
*Spatial Expressions of Human Activities: Significance for Geographic Education* ..... Clyde F. Kohn
State University of Iowa, Iowa City, Iowa
*Geography: Across the Curriculum* ..... Neville B. Scarfe
University of British Columbia
Vancouver, British Columbia, Canada
*Reintroduction of Substantial Programs in Geography in the Schools of Ontario* ..... Edward G. Pleva
University of Western Ontario in London
Ontario, Canada

**2:30 p.m. Sectional Meetings**

GEOGRAPHIC EDUCATION ACROSS THE CURRICULUM

SECTION 1 ..... *West Room*

A PROGRAM OF GEOGRAPHIC EDUCATION FOR GRADES 4 THRU 6 (CONTENT, CONCEPTS, AND VALUES)

Leader: Margaret Carlson, Principal, South School, Glencoe, Illinois
Panelists:
Thomas F. Barton, Editor, *Journal of Geography*, Indiana University, Bloomington, Indiana
Katheryn Thomas Whittemore, New York State College for Teachers, Buffalo, New York
Discussants:
Frank S. Almroth, Principal, Benjamin Franklin School, Westfield, New Jersey
Sister M. Coletta G N S H, Executive Secretary, New York State Curriculum Committee, Ogdensburg, New York
Sister Maureen R S M, St. Simon Stock High School, Bronx, New York
Frances P. Mele, Public School 67, Bronx, New York City, New York
Sister Mary Pascal, O.P., St. Thomas Apostle School, Woodhaven, New York
Frank E. Sorenson, University of Nebraska, Lincoln, Nebraska
Recorder:
Mary L. Caruso, Assistant in Instructional Services, Roslyn Public Schools, Roslyn Heights, New York

SECTION 2 ..... *Hartford Room*

A Program of Geographic Education for the Junior High School (Content, Concepts, and Values)

Leader: M. Melvina Svec, State University of New York, Oswego, New York
Panelists:
Paul F. Griffin, Stanford University, Stanford, California
Genevieve Blake, Social Studies Consultant, Board of Education, Brooklyn, New York
Discussants:
Franklin C. Alliston, Livingston, New Jersey
Sister Mary Aquinas C.R., Principal, Saint Clemens Mary School, Manhattan, New York
Carol Brumby, Delta State College, Cleveland, Mississippi
Norman Carls, University of Pittsburgh, Pittsburgh, Pennsylvania
Glenn Van Stephenson, Teachers College, Columbia University, New York, New York
Sister Mary Xavier, St. Frances De Chantal School, Bronx, New York
Recorder:
Dorothy Sorrells, Principal, Will Rogers School, Houston, Texas

SECTION 3 ..... *Dallas Room*

A Program of Geographic Education for the Senior High School (Content, Concepts, and Values)

Leader: Helen Mixter, Principal of Hamilton School, Baltimore Public Schools, Baltimore, Maryland
Panelists:
Henry J. Warman, Clark University, Worcester, Massachusetts
Edward Kolevzon, Principal, Christopher Columbus High School, Bronx, New York
Discussants:
Carrie E. Babb, Reading Public Schools, Reading, Pennsylvania
Emily H. Baker, O'Fallon Technical High School, St. Louis, Missouri
John A. Bonham, Brandywine Schools, Coatesville, Pennsylvania
Sister Catherine Immaculate, St. Francis of Assisi School, Brooklyn, New York
Brother Austin Matthias F.S.C., Principal of the Immaculate Conception School, New York City, New York
Lester C. Oakes, Senior High School, Norwalk, Connecticut
Abraham Resnick, State Teachers College, Jersey City, New Jersey

SECTION 4 ..... *Washington Room*

Content, Concepts, and Values in the Geography Curriculum—College

Leader: Lt. Colonel Robert T. Ramsaur, United States Air Force Academy, Denver, Colorado
Panelists:
Minnie E. Lemaire, Mount Holyoke College, South Hadley, Massachusetts
Robert Petluck, Principal, Public School 86, Bronx, New York
Ying-Cheng Kiang, Eastern Illinois University, Charleston, Illinois
Discussants:
Leonard Kuntz, University of Pittsburgh, Pittsburgh, Pennsylvania
Robert B. McNee, The City College, New York City, New York

Howard H. Martin, University of Washington, Seattle, Washington
Earl B. Shaw, State Teachers College, Worcester, Massachusetts
Paul P. Vouras, State Teachers College, Patterson, New Jersey
Gilbert F. White, University of Chicago, Chicago, Illinois

Recorder:
Robert S. Funderburk, Central Washington College of Education, Ellensburg, Washington

**4:30 p.m. Group and Open Committee Meetings**

*Revision of Topographic Maps* ..... *Buffalo Room*
Chairman: Lyle R. Fletcher, Bowling Green State University, Bowling Green, Ohio

*Conservation (Resource Use) Education* ..... *Dallas Room*
Chairman: Sigismond de R. Diettrich, University of Florida, Gainesville, Florida

*Television in Geographic Education* ..... *Washington Room*
Chairman: Jewell Phelps, George Peabody College for Teachers, Nashville, Tennessee

*Survey of Geographic Research* ..... *Boston Room*
Chairman: Paul F. Griffin, Stanford University, Stanford, California

*State Coordinators Conference* ..... *Hartford Room*
Director: Herbert H. Gross, Concordia Teachers College, River Forest, Illinois

**7:00 p.m. Annual Banquet** ..... **Cafe Rouge**

(Informal or formal dress, optional)
Presentation of Distinguished Guests from United Nations
Presentation of Awards:
*Journal of Geography Award*—Techniques in Geography at the High School Level
*Journal of Geography Award*—Article in the Field of Regional Geography
*Journal of Geography Award*—Article in the Field of Political Geography
*Distinguished Service Award, NCGE*
*Address:*
*The First Winter at the South Pole* ..... Paul A. Siple
Director of Environmental Research, Department of Army, Washington, D.C.

**Saturday, 9:00 a.m. Third General Session** ..... **Grand Ballroom**

FOCUS ON REGIONS OF INCREASING IMPORTANCE IN GEOGRAPHY EDUCATION

Presiding ..... Adelbert K. Botts
First Vice President, National Council for Geographic Education, State Teachers College, Trenton, New Jersey

*Recent Developments in South America* ..... Preston James
Syracuse University, Syracuse, New York

*Korea: Geographic Parallels, 1950-58* ..... Shannon McCune
Provost, University of Massachusetts, Amherst, Massachusetts

*Recent Developments in Africa—Economic* ..... William A. Hance
Columbia University, New York City, New York

**10:45 a.m. Twelfth Annual General Assembly** ..... **Grand Ballroom**

(Attendance at this meeting is restricted to members)

Presiding ..... Mary Viola Phillips
President, National Council for Geographic Education, University of Pittsburgh, Pittsburgh, Pennsylvania

*Our Forty-fourth Year* ..... John W. Morris
Secretary, National Council for Geographic Education, University of Oklahoma, Norman, Oklahoma

*Our Financial Status* ..... John H. Garland
Treasurer, National Council for Geographic Education, University of Illinois, Urbana, Illinois

*Report of Planning Committee* ..... Henry J. Warman
Clark University, Worcester, Massachusetts

*Report of Resolutions Committee* ..... M. Melvina Svec
State University of New York, Oswego, New York

*Report of Nominating Committee* ..... Jewell Phelps
George Peabody College for Teachers, Nashville, Tennessee

*Prospects for 1959* ..... Adelbert K. Botts
State Teachers College, Trenton, New Jersey

## ALL DAY FIELD TRIPS

### New York Meeting, November 27, 1958

There will be two all-day field trips by bus led by geographers who have had considerable experience in conducting field parties in the Metropolitan New York region. These bus trips will study the past and possible future development of portions of the New York-Northeastern New Jersey Metropolitan Region. The fee for the trip will be approximately five dollars.

Trip No. 1: *New York City's Last Frontier: Staten Island.*

This trip will include an examination of both morraine and tidal swamp sections of the island; the colonial settlement areas; the more recent urban development near the ferry terminal to Manhattan; the Free Port area; industrial development on Arthur Kill; the agricultural and vacant areas of the island; the present traffic routes; and the probable effect of the access to Brooklyn to be provided by the Narrows Bridge. Trip leaders: Dr. John Brush of Rutgers University and Dr. Alexander Melamid of New York University.

Trip No. 2: *The Water Resources of an Urban-Industrial Region: The Passaic River Valley.*

This trip will emphasize the various problems related to the historic development of water resources in the Passaic Valley of New Jersey. It will include both the historical geography of the area and modern attempts to deal realistically with water problems. Several places of interest will be visited in the valley including a modern water purification plant and the city of Paterson—a decaying industrial city founded in the 18th Century by Alexander Hamilton to make use of the power of the falls on the Passaic River. Trip leaders: Dr. Daniel Jacobson of the Montclair New Jersey State College and Dr. John Dean of Hunter College.

For further details regarding the all-day field trips contact:

Dr. Robert B. McNee
Field Trip Coordinator, NCGE
Department of Economics
The City College
New York 31, New York

# REVIEWS

Pounds and Parker. **Coal and Steel in Western Europe.** Indiana University Press, Bloomington, Indiana, 1957. 381 pages with 21 illustrations. $6.00.

This study begins with an excellent analysis of the extent and characteristics of the iron industry in the several European nations in the eighteenth century. Here is discussed the wide distribution of iron ores, the geographical distribution and size of iron making plants, political geographic, physiographic and political factors which had a bearing on their size and location.

The technology of iron ore reduction and its evolution during the eighteenth century is related in considerable detail in the second chapter. The following chapter gives a description of coal fields in western European nations.

In Part II, a brief description of the technological evolution into the modern stage, is followed by a detailed description of the coal and ore resources, and the historical and technological development in the major steel producing nations—Belgium, France, Lorraine, Luxembourg and the Saar, and Germany.

Economic and international political aspects of the iron and steel industry of western European nations are discussed in the third and final section of this study. In the first chapter of this section (Chapter 9), the author (Parker) traces the expansion from 1880 to 1913 as one of rapid growth with relatively small fluctuations in the upward trend. After 1913 and until 1956 this upward movement continues but with several interruptions and sharp declines in production.

Chapter 10 is an illuminating discusesion of the development and maintenance of the two broad areas in western Europe in which coal, coke, iron and steel industries developed, i.e., the Ruhr Valley in the north and the Saar-Lorraine region in the south. The patterns of production and the productive characteristics of these two regions is discussed in considerable detail.

Of particular interest is the discussion on the origins of the European Coal and Steel Community, the post-war conditions which gave rise to the plan, the program outlined by the sponsors of the plan and the contribution that this plan can make toward stability, prosperity, and peace in western Europe.

W. H. VOSKUIL

*University of Illinois*

Andrew C. O'Dell. **The Scandinavian World.** Longmans, Green and Company, 55 Fifth Avenue, New York 3, New York. 1957. 549 pages, including 199 illustrations and maps. $5.50.

The need for a general, authentic treatment of the Scandinavian dominated areas of the world has long been felt, particularly in the English speaking countries. This need has been well met by Professor O'Dell, himself a distinguished Scotsman who holds a professorship of Geography in the University of Aberdeen. There are splendid geographic treatises, fullsome volumes by Norwegians, Swedes and Danes, written by scholars from each of their respective countries in their individual languages but, so far as the reviewer knows, no one book covers all the so-called Scandinavian world so adequately in the English language and in such limited space.

Professor O'Dell divides his discussion into three main heads, namely, I. Physical and Historical Introduction, II. Regional Geography, and III. Economic Geography. In each part there is recognition of the interrelationships of physical, cultural, and economic factors thus tying the text into an integrated whole while recognizing the dominant elements in each case.

In Part One there is an unique and most interesting correlation of physical factors such as structure, relief, and climate with the abode and activities of early man in Scandinavia. The discussion may be provocative of some dissent but is reasonable and most lucidly stated.

Part Two deals with political units from Finland to Greenland with the more detailed attention devoted quite naturally to Sweden, Norway and Denmark. Briefer descriptions are given the lesser units such as Finland, Faeros, Iceland, and Greenland —lesser from a Scandinavian point of view—but in all cases the broad aspects of unity are emphasized even tho there are major differences in detail.

In Part Three the author deals with Economic Geography on a topical basis varying from Agriculture, Fisheries, and Transport to Population. Well written and informative thruout but not so exciting to read as are Parts One and Two.

One general characteristic should be highly commended, namely, the author gives technical terms in the native language and in each case also gives its English equivalent. This is of great help in reading articles published in the Scandinavian languages. Furthermore there is a carefully selected bibliography arranged by countries. O'Dell's book deserves a place wherever authentic information about Scandinavia is sought and that should be world-wide because of the cultural and scientific contributions made by the Scandinavian peoples.

NELS A. BENGTSON

*University of Nebraska*

Irma Simonton Black. **Busy Water.** Illustrated by Jane Castle. Holiday House, 8 West 13th Street, New York 11, New York. 1958. Thirty-three pages of illustrated story. $2.50.

How many times have you heard a child ask, "Why does it have to rain today?" *Busy Water* attempts to answer not only the *why* but also the *how* of rain. In an elementary way that is understandable by primary age children, it explains the concept of the water cycle. The tendency to include the many uses of water might be confusing to the very young children when their thoughts are moved from the trip being taken by the water to the activities within factories and harbors. Basically, however, the general ideas would be understood by primary children.

The print is excellent as are the choice and repetitive use of words. There is a rhythm to the words that would encourage children to read and reread the story. The illustrations give a fine general impression of the story yet contain much detail that gives additional information to an observant child. The illustrations when studied first, build a reading readiness for the story itself.

*Busy Water* is delightful. It will be read by many children just for enjoyment. But it will also give them significantly accurate information about water, its cycle, and its uses.

RUTH SUGARMAN

*State University of New York*
*College for Teachers at Buffalo*

Otis Freeman and Rolland H. Upton. **Washington State Resources.** Washington State Resources Committee, 914 Rainier Avenue, Seattle 44, Washington. 1957. 210 pages with illustrations, maps, graphs, and index. $3.00.

*Washington State Resources* is the type of Geographic analysis which should be written for every state of the Union. Concise and direct in its geographic appraisal, this book is of value to the student, the layman and to the professional geographer. This

geographic picture of the state of Washington is aimed at the younger reader, using, as far as possible, non-technical language. Imaginative historic-geography settings also help the young readers and non-geographers understand the sequential occupance of the various regions of Washington.

Altho written at the secondary level, the book provides excellent reading for the adult. The ease of reading is a relief from the too often studied obtuse approach of the more technical books. At the same time the solid geographic content satisfies the professional geographer.

The content of the book shows much scholarly research on the part of the authors. Altho not giving a "Chamber of Commerce" portrayal of Washington's resources, nevertheless, the reader cannot fail to be impressed with the wide variety and usefulness of this state's resources. Here indeed must be a state which can look forward to continued growth based solidly on the geography of that state.

ALAN P. MEWHA

*State Teachers College*
*Indiana, Pennsylvania*

T. W. Freeman. **Geography and Planning.** Hutchinson's University Library, London, England, 1958. Available through Rinehart and Company, Inc., New York. 191 pages. $1.50.

A geographer who teaches geography to students of planning in England sets forth the gist of his experience and reflections in this book, written for the layman as well as the planner and administrator. Geography teachers and students will find it valuable for insights into many phases of pure and applied geography.

"Planning has an inescapable geographical basis." This thesis is elaborated in detail, with attention to physical landscapes, climate and weather, rural land uses, urban geography, problems of industrial location, and national parks. The author finds the distinction, commonly made in America, between natural and cultural landscape useless in treating his home country, where virtually all aspects of the earth have been greatly modified by man. The reader is constantly reminded that the British landscape has a venerable history.

Illustrations generally refer to details of British geography unfamiliar to American readers; on the other hand, the application of fundamental principles to an unfamiliar setting is enlightening. The chapter on National Parks, for example, might well be used as an introduction to geographical *differences* between Great Britain and the United States. One is impressed, too, with the attention given to the limits of agricultural land and the encroachment on it of urban uses; but a moment's reflection will remind us that similar problems occur on both our east and west coasts.

This is a welcome addition to the growing but still too limited list of geography books that are not text books. One may be permitted to hope, too, that planners will find it stimulating and practical.

J. RUSSELL WHITAKER

*Peabody College*

Norton Ginsburg, Editor. **The Pattern of Asia.** Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1958. xiv and 929 pages with photographs, maps, and index. $11.65.

To call Asia "complex" seems now a quaint understatement. Textbooks on the geography of Asia have been written in the past by single authors. Cressey's *Asia's Lands and Peoples* and Stamp's *Asia* are outstanding examples of successful coverage under

one pen. In more recent years, a growing realization that no man can treat justly an area of such size and diversity has resulted in co-authorship. *The Pattern of Asia* is the work of six authors, each a specialist in his field. In spite of its bulk, 907 pages, the book does not claim to be an exhaustive treatment of the geography of the continent. Physical geography, tho lucidly discussed, occupies a minor part of the book; so also, cultural and historical geography. Instead, the book emphasizes the changing political and economic patterns and attempts to illustrate the various problems and potentials of the countries of Asia. The emphasis is on modern Asia in a state of change rather than on the traditional Asia of stability and conservatism. Topical discussions generally lead up to the year 1956.

The authors divide the continent into five realms. The realms of East Asia and South Asia occupy about 500 pages; Southeast Asia and Southwest Asia take up some 300 pages and Soviet Asia, 61 pages. Each realm is discussed first as a whole and then divided into its component countries. Most countries receive both systematic and reional treatment. The chapters on India and Pakistan are particularly good.

Most of the 36 maps are original and contain informative details that so seldom appear in textbooks. There are 161 well-chosen photographs accompanied by careful commentaries. A short list of selected geographical bibliography, with critical comments, follows each chapter. *The Pattern of Asia* will undoubtedly become a standard work of reference and text in colleges.

YI-FU TUAN

*Indiana University*

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## Announcement by Committee on Tests

The Committee on Tests, National Council of Geographic Education is compiling a handbook on *Measurement and Evaluation in Geography*. We would like to have samples of complete tests or individual questions at all grade levels from elementary through college to use as illustrative material for the handbook. We would like subjective and objective types, both written and oral. We also want those testing skills, attitudes, and appreciations, as well as subject matter. Please designate grade level and send the material to: Berenice M. Casper, Chairman of the Committee on Tests, National Council of Geographic Education, 2632 K Street, Lincoln 10, Nebraska.

## Reservations for November Meeting

Have you made your hotel reservations for N.C.G.E. November meeting in New York City? The management of the Hotel Statler Hilton has agreed to the following special rates for those attending the New York City meeting: singles are $8.00; doubles, $6.00 per person; and twins, $7.50 per person. When you write for reservations, please mention N.C.G.E. or these special rates will not be granted. Send reservations to: Mr. George Maher, Front Office Manager, Hotel Statler Hilton, New York 1, New York.

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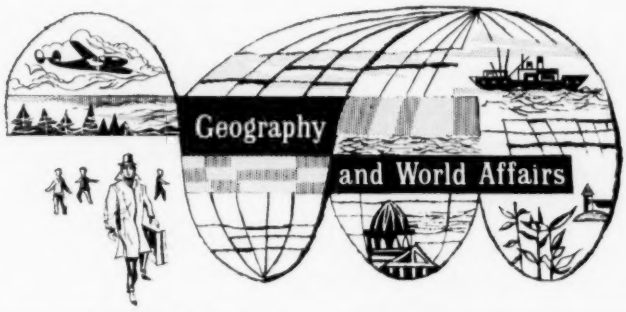


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# *Announcements*

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## INDEX to the JOURNAL OF GEOGRAPHY

Type is now being set on the INDEX to the JOURNAL OF GEOGRAPHY (1922-1956). This INDEX will make a book of approximately 270 pages. It is proposed that the hard back copies of this publication sell for $5.00 each and that paper back copies be sold to non-members for $4.00 each. Members of the organization can purchase the INDEX for $3.00 per copy, or at only a little above the cost of publication.

## Do It This Way Series

*Geography Via Television* by Jewell Phelps, the first booklet of the Do It This Way Series, is now available for distribution. The booklet sells for $1.00 a copy.

## Careers in Geography

Have you seen the brochure entitled Careers in Geography. The brochure is free to those high school principals, advisors, and others that will write to Professor John W. Morris, Secretary of the National Council for Geographic Education, Department of Geography, University of Oklahoma, Norman, and let him know how many you can use.

## Professional Papers

Professional Papers No. 16, 17, 18 and 19 are now available for sale. Write to Professor John W. Morris, Secretary of the National Council for Geographic Education.


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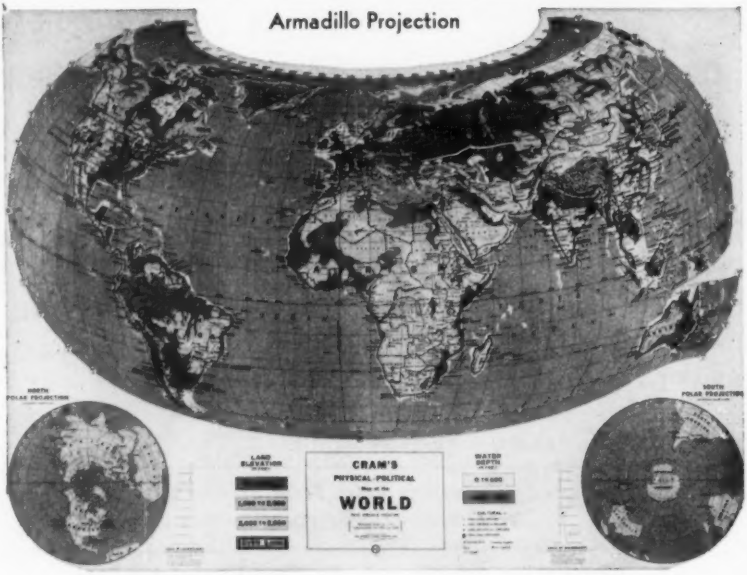


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